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Receptor Model Source Composition Library

Nero and Associates, Inc., Portland, OR

Prepared for

Environmental Protection Agency
Research Triangle Park, NC

Nov 84

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16. ABSTRACT

The information in this document is an initial effort to gather, evaluate and compile technical data describing the chemical composition of source emissions. Because of limited resources, this study has placed highest priority on the inclusion of size resolved data sets that have been developed specifically for receptor modeling studies. To the extent possible, and consistent with data quality criteria, other studies reported in the literature have been included. Because of the volume of data not size resolved, no attempt is made here to compile all information on this subject currently available.

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Receptor Model Source Composition Library

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U.S. ENVIRONMENTAL PROTECTION AGENCY
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SOURCE COMPOSITION LIBRARY
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Preface

This document supports a series of technical reports describing Receptor Models and their application to air resource management. The reader is encouraged to refer to the following documents:

Volume No.	Title	EPA Publication No.
I	Overview of Receptor Model Applications to Particulate Source Apportionment	EPA/450/4-81-016a
II	Chemical Mass Balance	EPA/450/4-81-016b
III	User's Manual for the Chemical Mass Balance Model	EPA/450/4-83-014
IV	Summary of Particle Identification Techniques	EPA/450/4-83-018
V	Source Apportionment Techniques and Considerations in Combining Their Use	EPA/450/4-84-020

The body of information reported in this document is an initial effort to gather, evaluate and compile technical data describing the chemical composition of source emissions. Because of resource limitations, this study has placed highest priority on inclusion of size-resolved data sets that have specifically been developed for receptor modeling studies. Other studies reported in the literature have been included to the extent possible consistent with data quality criteria. Due to the volume of non-size resolved data, no attempt has been made here to compile all of the information currently in the literature.

The EPA Source Library represents an attempt to provide available source characterization data in an organized manner for receptor model applications. Profiles for individual sources may vary considerably from the values provided in this document. Source specific data from local sources are therefore preferable to the use of literature data and are recommended, particularly for regulatory applications. Nevertheless, preliminary analyses, based on source profiles obtained from this document, may be adequate to meet a number of objectives. The user must ultimately assess whether the data in the Source Library are appropriate for use in any particular application.

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In addition, the contributions of Dr. John G. Watson, Jr. of the Desert Research Institute, University of Nevada are acknowledged for his assistance in preparing portions of the text describing profile compositing and PM_{10} profile calculation methods.

I. INTRODUCTION

Substantial progress has been made over the past ten years in reducing particulate matter levels in many areas of the United States. There are, however, many areas that are still not attaining the National Ambient Air Quality Standards (NAAQS) for particulate matter. In many of these cases, revised control strategies requiring the imposition of additional controls will need to be developed. Because of the costs involved with implementing a control program, proposed strategies must be critically evaluated in terms of their costs and overall effectiveness.

The development of air pollution control programs by State and local agencies and the evaluation of the effectiveness of these programs require an understanding of the following:

- Chemical and physical characteristics of particulate matter,
- Origin of the particulate matter, and
- The contribution of each source to the nonattainment problem.

Until recently, dispersion models based on source emissions and meteorological parameters have been the primary tools used by the State and local agencies to estimate the air quality impact of a source at a receptor site. Within the past four years, however, receptor-oriented models have become more widely used as a source assessment tool.(1,2) Receptor models are a family of techniques which examine the ambient sample and conditions of its collection to infer the relative mix of sources impacting the receptor(3,4). Because of the importance of understanding the true impact of source emissions and the limitations of dispersion models, receptor model techniques have been developed as an alternative approach. This document is a compilation of source profile data essential to the application of many of the receptor modeling techniques.

The purpose of this report is to: (1) update and expand earlier unpublished efforts to compile a source library, (2) assess the usefulness of each data set in terms of its applicability to chemical receptor models, and (3) compile the most useful profiles into one, central document.

To insure that the data reported herein is as current as possible, nearly 100 researchers that have, or are currently working in, source emission characterization have been contacted to determine: (a) the nature of source composition data sets in their possession, and (b) the availability of the data for inclusion in this document. Finally, a major effort has been made to review, edit and document the source library data bases currently being used by receptor modelers. Since most of these data were specifically designed for receptor modeling studies, they represent an extremely important resource to all users.

The report is divided into four major sections: The introductory chapter describes the source emission composition requirements of the models, appropriate cautions related to the use of the data and a description of the study methodology. Chapter II discusses the data sets included in the document, particle size distribution of emissions, analytical methods, the data ranking system used, the data tabulation format and a discussion of source profile uncertainties. Methods used to calculate PM_{10} profiles and combine profiles from similar sources are also presented.

Chapter III is the heart of the document -- the source emission composition profiles. Appendix A lists the references for each of the profiles included in the document and Appendix B, contributed by J.G. Watson of the Desert Research Institute, lists additional references containing useful emission composition information.

A. Source Emission Composition Requirements

Source chemical composition data are an important part of interpretive receptor modeling. Although a great deal of source composition data has been published, it has never been compiled in a single document for use in receptor modeling applications.

A critical requirement for the success of receptor models is that the composition of the emissions and particle size properties from all major sources within the airshed must be as accurately known as possible. Although the body of information contained in any source library can be extremely useful in receptor model studies, characterization of the emissions from local sources (where possible) is preferable to the use of literature data, just as actual measurements of source emission rates are preferred to generalized emission factors. Knowledge of the composition, or profile, of source emissions is required for all forms of receptor models, including the analytical techniques (i.e., optical microscopy or x-ray diffraction). Figure I-1 is an example of typical source profile. Multivariate techniques such as factor analysis and target transformation factor analysis, while they do not require source profile data as a direct input to the model, still rely on the analyst knowledge of source emission composition to enable a common name such as soil dust to be applied to an abstract group of particle features. Although extensive libraries of particle reference samples and x-ray diffraction (XRD) patterns have been developed for polarized light microscopy and XRD analysis, a centralized library of source composition data has not been previously available.

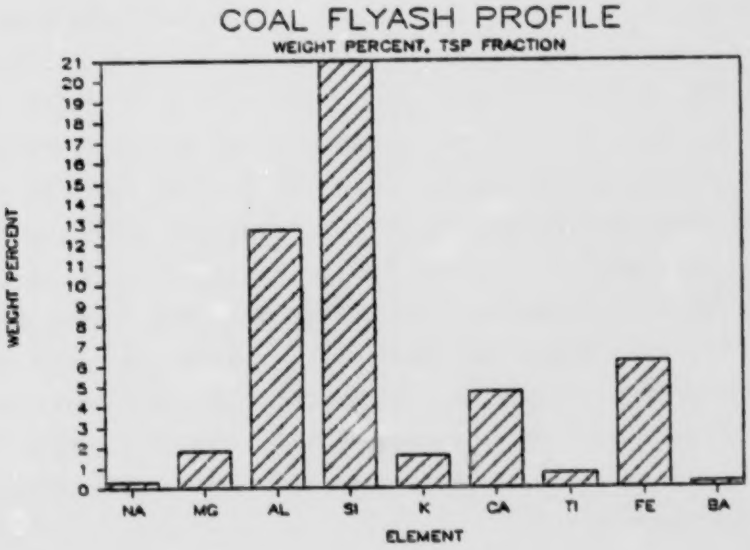

Figure I-1. Typical Source Profile

- Data Set Limitations

Because very little of the data reported in the literature have been specifically developed for receptor modeling applications, users must be aware of the limitations of each data set, specifically with respect to measurements of carbonaceous emissions and volatile elements (Pb, Zn, As, etc.) that partially exists in the gaseous phase at high stack temperatures. Unless special precautions (i.e., dilution source sampling, aircraft or balloon methods) are taken, these components will not be accurately represented in the data. In addition, many of the studies found in the literature, because of the sampling and analytical protocols employed, do not report a sufficiently broad range of aerosol components to account for the majority of the aerosol mass. Receptor model studies that use these source profiles are typically unable to satisfactorily explain the concentrations of trace elements, carbonaceous or ionic species measured in the ambient aerosol, a deficiency that often limits the ability of receptor models to accurately apportion all of the ambient aerosol mass. In addition, source impacts calculated on the basis of a small subset of trace elements in the source profile are subject to much greater uncertainty than those that utilize the full complement of aerosol features.

The source emission profile data should be carefully reviewed to ensure that they reasonably represent the sources in the airshed being studied. Adjustments to the composite transportation emission profile, for example, must be made in recognition of the differences in the ratio of leaded/unleaded/diesel fuel use in the specific airshed of interest. Similar evaluations of the original literature for each source of interest -- and its applicability to the airshed being studied -- should be completed to ensure that the source profile data used is representative of reality. To assist the reader in understanding the origin and limitation of each profile, a brief abstract of each data set accompanies each profile. Table I-1 can be used as a guide to evaluate the applicability of source profile data to the area being evaluated.

TABLE I-1. Source Profile Considerations

Transportation Sources:

- Leaded/unleaded/diesel vehicle mix
- Br/Pb ratio assumptions
- Vehicle mix in the near vicinity of the receptor
- Lead content in leaded gasoline

Soils:

- Local soil/literature chemistry consistency
- Importance of limestone in local soils
- Local soil enrichment by source emission deposition

Residual Oil Combustion:

- Similarity of local fuel trace element composition
- Use of fuel additives

Primary Metals:

- Chemical composition of alloys
- Process similarities

Coal Combustion:

- Similarity in coal sulfur and trace element composition
- Control equipment similarities

Source profile nomenclature used in receptor modeling studies should be carefully reviewed before they are adopted by the analyst. For example, different studies have reported impacts from "calcium sources," "construction" and "cement dust" while, many in fact, are based on the chemical composition of Portland cement dust. It is the user's responsiblity to evaluate and apply the most appropriate common name to these profiles.

Similarly, impacts associated with geologic, or crustal, sources have been referred to as shale, paved road dust, windblown soil, agricultural tilling, rock crusher emissions, rock quarry dust or unpaved road dust, depending upon the investigator's analysis of which crustal source is most likely to be impacting the receptor.

Ideally, source emissions and ambient aerosol characterization programs should be based upon identical methods of particle sizing and chemical analysis to ensure, to the maximum extent possible, compatibility between the two data sets. Because the chemical composition of many emission sources is known to be a function of particle size, application of source profile data based on the TSP fraction (<30 μm) to source apportionment of particulate mass in the fine particle fraction (<2.5 μm) may severly compromise the validity of the analysis.

The source composition profiles must also be representative of airshed emissions at the time the ambient aerosol sampling occurs. Variations, for example, in the seasonal nature of the emissions may require that some sources be more accurately characterized than others during certain periods of the year.

Finally, the user should be aware of the potential variability in the chemical composition of emissions--both within a source group and between similar sources(5-8). Because of the limited availabilty of high-quality size-resolved source profile data sets, an indepth evaluation of the magnitude of profile variability is not yet possible. Cursory comparisons of TSP profiles that have appeared in literature suggest that profile variability is highly dependent upon the chemical composition of fuels or process materials, the volatility of specific elements, the point within the process cycle that the sampling occurs and the analytical techniques used. Figure I-2 illustrates the degree of variation in coal flyash composition reported in Table II-2. Given the variety of variables that may influence the data and the limited research that has been conducted to date, the reader should be aware that the profile uncertainties reported herein must be regarded as tentative.

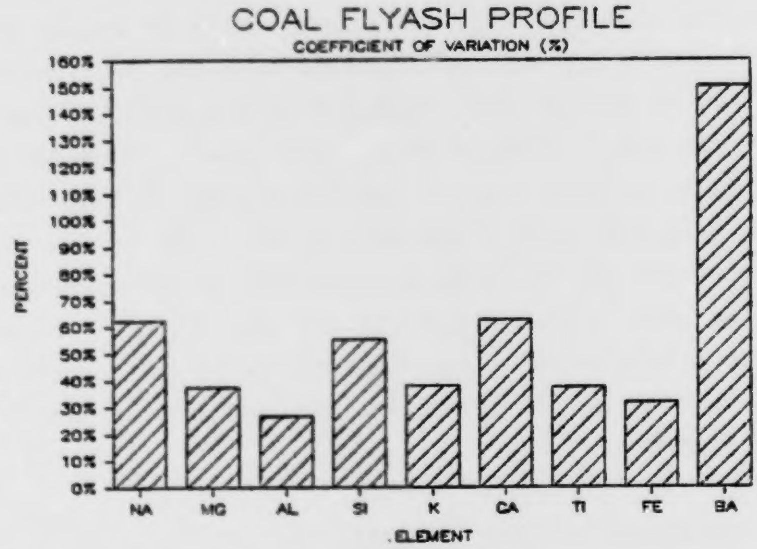

Figure I-2. Coal Flyash Profile Variability

B. Methodology

Tasks completed during this project included; (1) reviewing and editing existing receptor model source composition data sets; (2) entry of all of the data into a standardized format; (3) surveying and soliciting new data from receptor model researchers; (4) evaluation and documentation of each data set; (5) development of a methodology for estimating the chemical composition of the particle fraction less than 10 µm (PM_{10}) and, (6) development of guidance to be used in combining source profiles from similar sources.

1. Literature Review

The source profiles contained herein were obtained from the literature, new data sets obtained during this effort and from unpublished data contributed by receptor model researchers. The literature survey included documents identified during a computerized literature search provided by the EPA Library in Research Triangle Park, North Carolina. A search was also made of Industrial Environmental Research Laboratory's (IERL) Project Profile System (PPS) and the Combustion Emission Analysis Catalog System (CCEA) developed as part of IERL's source assessment program. In addition to these sources, data was collected from a number of source composition and receptor modeling studies conducted over the past several years and from source profile data contained in the EPA-IERL Fine Particle Emission Information System (FPEIS) data base. Although the FPEIS system contains a great deal of data describing the mass distribution of source emissions, much of the data is not of direct use to receptor modelers because (a) the data is reported in concentration ($\mu g/m^3$) units rather than in weight percent and (b) little or no supportive information is available to convert the data to the correct units. A complete bibliography of references reviewed during this effort is listed in Appendix A.

2. EPA Environmental Assessment Database

Much of the emission characterization data reported in the literature has been developed by the EPA Industrial Environmental Research Laboratory (IERL) as a part of their Level 1 Environmental Assessement (EA) program. The Level 1 protocol is intended to provide comprehensive emission characterization information on all process streams in a cost effective manner. This requires the application of semiquantitative (± a factor of 3) sample collection and analysis.

Although the EA Level 1 data base is a valuable resource, receptor model application of the data imposes several important limitations; condensable particles are not included in the cyclone and filter catches but instead are sampled and analyzed as a single composite. More importantly, the Spark Source Mass Spectroscopy technique used for elemental analysis of the samples does not provide the level of quantitative data required by receptor models, major elemental components of the sample are often not reported and profile components are routinely reported in emission factor units (ng/Joule) or stack concentrations (μg/m^3). Consequently, Level 1 EA data sets have not been included in this document. The data does, however, provide qualitative information that can be of value in designing source characterization studies.

II. THE SOURCE PROFILE DATA SETS

A. Overview

Many of the studies included in this document contained chemical composition data for sodium (Na), magnesium (Mg), aluminum (Al), silicon (Si), phosphorous (P), sulfur (S), chlorine (Cl), potassium (K), calcium (Ca), titantium (Ti), chromium (Cr), manganese (Mn), iron (Fe), nickel (Ni), copper (Cu), vanadium (V), zinc (Zn), bromine (Br), and lead (Pb). A few studies or reference contained data for organic carbon (OC), elemental carbon (EC), nitrate ion (NO_3^-), carbonate ion (CO_3^{-2}), sulfate ion (SO_4^{-2}), cobalt (Co), and arsenic (As). Very few studies contained data on flouride (F), cadmium (Cd), beryllium (Be), tin (Sn), antimony (Sb), scandium (Sc), selenium (Se), rubidium (Rb), strontium (Sr), cesium (Cs) or elements with atomic numbers less than 14 (silicon).

Although most of the studies provided data on total particulate(<30µm), relatively few data sets provided information on other particle sizes. In general, particle size data were available for <2.5µm, 2.5-10µm, and <30µm. However, some studies provided data in other size ranges. In those cases where other than <2.5, 2.5-10 and <30µm fractions were reported in the reference, a footnote will be found on the profile. Because the particle size data were extremely limited, data for other size ranges were incorporated into the three standard size ranges based on the assumption that the chemical composition of similar size cuts (i.e., 1.5, 2, and 3µm particles), were very similar to that of the standard groups. Adoption of this assumption is necessary until such time that more particle size data sets are available.

Because of the limited volume of data, there may be only one reference for many of the source types listed in Section III. A limited number of particle size data sets are available for almost all source categories, however. Particle size data from more than one study are available for transportation sources, external combustion, ferroalloy manufacturing, secondary nonferrous industries, aluminum processing, glass furnaces, wood waste boilers, crustal and vegetative burning sources. Very little good information is available in the open literature for iron and steel sources.

Table II-1 presents the trace element composition of coal flyash as a function of particle size. Unfortunately, several of the primary components (Si, Ca, K, and Mg) were not included in the analysis.

The composition of coal flyash has been extensively studied by a number of investigators. An attempt has been made to include several representative data sets in this document rather than to present a comprehensive analysis of the composition of coal flyash. Table II-2 summarizes results obtained from five studies. In general, these studies indicate that the concentration of Pb, Sb, Cd, Se, As, Zn, Ni, Cr and Cu increase markedly with decreasing particle size while V, Mn and Be seem to be independent of particle size. Volatile elements, such as Se and Hg, that are largely found in the gaseous phase at stack temperatures are not accurately represented since stack-gas dilution sampling methods have not been widely employed.

B. Analytical Methods

A variety of analytical techniques have been used to identify the chemical composition of the source emissions included in this document. These include: (1) atomic absorption, (2) instrumental neutron activation analysis, (3) X-ray flourescence, (4) spark source mass spectrometry, (5) ion chromatography, (6) carbon combustion and organic carbon extraction techniques.

Some of these techniques can detect and quantify the concentration of many elements while others can detect certain elements but cannot accurately quantify their concentrations. The data cannot be segregated by analysis techniques to identify profile variability as a function of analytical method, because a variety of techniques have been used.

The most common analytical techniques are:

TABLE II-1. TRACE METALS IN COAL FLYASH AS A FUNCTION OF PARTICLE SIZE

Element[a]	Concentration (wt. %)				
	12.5 - 25 µm	10 - 12.5 µm	3 - 10 µm	1.5 - 3 µm	<1.5 µm
Al	6.70	5.43	5.73	6.36	5.93
B	0.30	0.50	0.50	0.50	0.50
Cd	<	<	<	<	0.100
Cr	0.13	0.13	0.13	0.30	0.30
Cu	0.15	0.15	0.20	0.20	0.20
Fe	4.00	5.90	4.35	3.50	3.23
Mn	0.20	0.24	0.29	0.39	0.50
Ni	0.30	0.20	0.20	0,30	0.30
Pb	0.30	0.20	0.30	0.30	0.50
V	0.20	0.20	0.30	0.20	0.20

[a] Sample collected from a coal-fired steam power plant and analyzed by neutron activation and spark source mass spectrometry. Source: Lee, 1975. Reference 11.

TABLE II-2
COAL FLYASH COMPOSITION
(WEIGHT PERCENT, TSP FRACTION)

SPECIE NUMBER	SPECIE NAME	NBS FLYASH #1633 (1)	ALAN POWER PLANT (2)	AVERAGE OF 4 STUDIES(3)+- STD. DEV.	KOWALCZYK ET.AL.(4)	BOLTON,ET. AL.(5)	MEAN VALUES REF 1-5.+- STD.DEV.	COEFFICIENT OF VARIATION
11	NA	0.320 +-0.040	0.500	<	0.203	0.280	0.261 +- 0.163	62.5%
12	MG	1.800 +-0.400	1.500	0.900 +- 0.400	0.660	0.880	1.148 +- 0.429	37.4%
13	AL	12.700 +-0.500	20.500	11.700 +- 3.000	12.700	10.000	13.520 +- 3.627	26.8%
14	SI	21.000 +-2.000	NR	24.000	NR	10.000	18.333 +- 10.119	55.2%
16	S	0.170 +-0.030	<	<	<	0.105	0.055 +- 0.070	128.0%
17	CL	0.004 +-0.001	<	<	0.025	<	0.006 +- 0.010	167.7%
19	K	1.610 +-0.150	1.600	3.300 +- 1.000	1.650	1.280	1.888 +- 0.718	38.0%
20	CA	4.700 +-1.500	1.500	3.800 +- 0.300	1.143	1.000	2.429 +- 1.523	62.7%
22	TI	0.740 +-0.030	0.235	1.000	0.762	1.000	0.747 +- 0.279	37.4%
23	V	0.023 +-0.001	0.042	0.080	0.038	0.010	0.039 +- 0.024	61.1%
24	CR	0.013 +-0.001	0.027	0.065	0.020	<	0.025 +- 0.022	87.9%
25	MN	0.050 +-0.002	0.060	0.034	0.038	0.055	0.047 +- 0.010	20.9%
26	FE	6.200 +-0.300	16.250	10.600 +- 4.000	8.890	10.000	10.388 +- 3.297	31.7%
27	CO	0.004 +-0.000	0.005	0.008 +- 0.001	0.006	0.006	0.006 +- 0.001	22.2%
28	NI	0.010 +-0.001	<	0.037	0.025	1.000	0.214 +- 0.393	183.3%
29	CU	< +-	0.515	0.031	0.051	0.040	0.127 +- 0.195	152.7%
30	ZN	0.022 +-0.003	1.500	0.520	0.064	0.090	0.439 +- 0.560	127.6%
33	AS	0.006 +-0.004	0.019	0.050 +- 0.030	0.076	0.005	0.031 +- 0.028	89.2%
34	SE	0.001 +-0.000	<	<	0.019	0.020	0.008 +- 0.009	117.5%
35	BR	0.012 +-0.001	0.001	<	0.050	<	0.013 +- 0.019	152.7%
40	ZR	0.030 +-0.002	<	<	<	<	0.006 +- 0.012	200.0%
48	CD	< +-	0.001	0.004 +- 0.001	0.003	0.001	0.002 +- 0.001	81.6%
51	SB	0.001 +-0.000	0.000	<	0.003	0.001	0.001 +- 0.001	120.3%
56	BA	0.270 +-0.200	1.500	<	0.114	0.010	0.379 +- 0.569	150.2%
58	CE	0.015 +-0.002	<	<	0.015	<	0.006 +- 0.007	122.5%
80	HG	0.020 ESTIMATED	0.000	<	<	<	0.004 +- 0.008	200.0%
82	PB	0.008 +-0.001	0.015	0.090	0.051	0.010	0.035 +- 0.032	91.7%
SUM(%)		49.726	45.770	56.219	26.606	35.793		

NOTES: NR = NOT REPORTED

(1) COAL FLYASH MIXTURE OBTAINED FROM ESP CATCH (UNIV. MARYLAND ANALYSIS) REF 12

(2) TVA POWERPLAN BURNING 13.4% ASH, 3.5% S BITUMINOUS COAL .
ESP CATCH (REF 13)

(3) AVERAGE VALUES FROM 4 EARLIER STUDIES AS REPORTED BY HEISLER,1975.
ST. LOUIS STUDY (REF. 14)

(4) ANALYSIS OF STACK SAMPLES BY INNA (UNIV. OF MARYLAND) NORMALIZED
TO 12.7% AL. (REF. 15)

(5) ANALYSIS OF COAL FLYASH OBTAINED FROM TVA's ALAN PLANT BURNING 10.5% S
BITUMINOUS COAL SAMPLED AT ESP OUTLET (REF. 16)

- X-ray Fluorescence (XRF)
- Instrumental Neutron Activation Analyses (INAA)
- Atomic Absorption Spectroscopy (AAS)
- Spark Source Mass Spectroscopy (SSMS)
- Carbon Combustion

One of these techniques, AAS, requires a separate analysis for each element, while others are non-destructive, multi-element methods. Table II-3 describes the limitations of each method.

1. X-Ray Fluorescence

X-ray fluorescence spectroscopy (XRF) involves production of characteristic fluorescence spectra by direct irradiation of the sample with X-rays. For analyzing air pollution aerosols, the method has the following advantages: no sample preparation is required; elements of atomic number 11 (sodium) and greater can be analyzed with fairly uniform detectability; the technique is nondestructive; and several elements can be determined simultaneously with available commercial equipment at low cost. Although this method does not have the sensitivity of instrumental neutron activation analysis or spark-source mass spectrometry, the detection limits may be improved by using preconcentration techniques. Precisions of +- 10 percent or less for microgram quantities of trace elements are typical.

2. Instrumental Neutron Activation Analysis

In INAA, the sample is directly irradiated in a nuclear reactor with no chemical dissolution or extraction. When bombarded by slow neutrons, many elements give rise to radioactive isotopes which emit radiation in the gamma-ray spectrum. The individual elements and their concentrations may be identified by examining the gamma-ray spectrum for these different radiation peaks. The main problem is interfering radioactivities. This can be minimized or eliminated by using radioactive separation to remove those elements which may interfere. The advantages of using INAA are that the method is

TABLE II-3. Source Characterization Elemental Analytical Techniques

Method		Quality	Elements Measurable	Major Limitations
XRF	> 2.5 um fraction	Good:	Al, Si, P, S, Cl, K, Ca, Ti, Mn, Fe, Cu, Zn, Br, Pb	No data on very light elements (e.g., C, N, H, O, Na) or on some very trace elements useful to source identification.
		Marginal:	V, Ni, As, Se	
	< 2.5 um fraction	Good:	Si, P, S, Cl, K, Ca, Fe, Cu, Zn Se, Br, Pb	
		Marginal:	Al, Ti, V, Mn, Ni, As, Cd	
INAA		Good:	Na, Mg, Al, Cl, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Co, Cu, Zn, As, Se, Br, Sb, I, Cs, Ba, La, Ce, Sm, Eu, Hf, Ta, Th	No elements below F, misses Si, Pb totally; marginal for Ni, Cd. Long turn-around time (2-3 weeks) for complete analysis.
		Marginal:	S, Ni, Ga, Rb, Sr, Ag, Cd, In, Yb, Lu, W	
Atomic Absorption		Good:	Li, Be, Na, Mg, K, Ca, Cr, Mn, Co, Ni, Cu, Rb, Sr, Cd, Cs, Hg, Pb, Bi	Have to dissolve samples; some inter-elements interferences, but difficult to detect. Special methods needed for some elements (e.g., Hg).
		Marginal:	Al, Si, Ti, V, Fe, Zn	
Spark Source Mass Spectroscopy SSMS		Good:	Li, B, Al, Si, P, Mn, Fe, Cu, Zu, Rb, U, Sr, Mo, Ag, Cd, Sb, Ba, Pb	Sample preparation is difficult. The accuracy of Na, K, Mg, and Ca is questionable because of their volatility under sparking conditions.
		Marginal:	Be, Cr, Co, Cs, La, Ce, Pr, Bi, Ti	

Source: Controlling Airborne Particles (Reference 17) nondestructive, it offers high sensitivity, reproducibility, and the capability for multielemental determinations, with no pretreatment of the sample. Analytical precision ranges from 2-10% for most elements.

3. Atomic Absorption Spectroscopy

In AAS, the sample must be vaporized by a flame or other energy source. Monochromic light of the same wavelenght as the element being analyzed, is passed through the va]pr/ The atoms which are present in the ground (unexcited state) in the vapor, absord the light radiation in proportion to their concentration. This depletion of energy can be measured yielding the concentration of a specific element. Problems that may be confronted include: contaminants in the prepared solution; matrix effects and molecular absorptions. Analytical precision is generally in the order of +- 10%.

Flame AAS can be used to determine Be, B, Cr, Mn, Co, Ni, Cu, Zn, Ag, Cd, and Pb concentrations. Flameless AAS can be used for Bi, Se, Sn, Te, Be, Pb, As, Cd, Cr, Sb, And Ge. The two methods are often used to compliment each other.

4. Spark Source Mass Spectroscopy

Spark-source mass spectrometry (SSMS) is an analytical survey method with good sensitivity. In this method, the samples, compounded in a silver or graphite electrode, are ionized with a high intensity spark. The intensities of the ions of different mass-to-charge ratios are measured and define different radial paths in a magnetic field. The sample spectrum is brought to a focus at varying points along a photographic plate positioned on the focal plane of the magnetic analyzer. Other modes of detecting individual isotopes include scanning of the ion species at a collector slit located at the principal focus. The method has several advantages, including high sensitivity, comprehensive element coverage, and linearity. Semi-quantitative determinations as low as 100 ppb for some elements can be performed by electrical scanning. This method also exhibits linear response for ionic concentration of the element in the sample.

Although detection limits with this method for most elements are in the parts-per-billion range, accuracy may be only + 50 percent, varying with the concentration of interferents, and data interpretation. Accuracy may be improved with the use of standards or with the use of stable isotope dilution method (SSMS-ID). For elements having stable isotopes, the accuracy of this method is restricted only by the homogeneity of the photographic emulsion on which the ion intensity is recorded.(9)

5. Carbon Combustion

Carbon analysis is conducted by heating samples collected on glass or quartz fiber filters in an oxygen atmosphere at 600° C to oxidize the carbon to CO_2, following which the CO_2 is reduced to CH_4 on a MnO_2 bed heated to 900° C. The methane is then measured by a flame ionization detector (FID). A portion of the same filter is then acidified within the sample combustion chamber, reducing carbonate ion present to CO_2, which in turn is further reduced to CH_4 and measured by FID. Since the total carbon measurement includes carbonate as well as carbon, some of the carbon values reported herein may have been corrected for carbonate interference. Other carbon measurements reported in this document (e.g., References 45, 46) have been corrected for artifact elemental carbon, while other data sets may not include corrections.

C. Source Profile Codes

Table II-4 presents the profile coding system used in this document. The intent of the system is to provide a simple yet flexible means of categorizing source profile information. Profiles have been coded into combustion sources (10000 series), industrial process losses (20000 series), transportation sources (30000 series) and area sources (40000 series). The primary and secondary categories are largely consistent with National Emission Data System (NEDS) source groups. Specific profiles within a source group are sequentially numbered from 1 to 99. Readers, for example, interested in accessing all of the source profiles for coal flyash from anthracite coal-fired utility boilers should refer to profile numbers 11101-11199, while transportation sources burning leaded gasoline are listed in the 31101 to 31199 profile series.

TABLE II-4. Source Profile Codes

10000. Combustion Sources

Profile No.

11000 External Combustion Boilers (Electric Generation)

11100	Anthracite Coal
11200	Bituminous Coal
11300	Subbituminous Coal
11400	Lignite
11500	Residual Oil
11600	Distillate Oil
11700	Natural Gas
11800	Wood Waste
11900	Solid Waste

12000 External Combustion Boilers (Industrial)

12100	Anthracite Coal
12200	Bituminous Coal
12300	Subbituminous Coal
12400	Lignite
12500	Residual Oil
12600	Natural Gas
12700	Wood Waste
12800	Solid Waste

13000 External Combustion Boilers (Commercial/Industrial)

13100	Anthracite Coal
13200	Bituminous Coal
13300	Subbituminous Coal
13400	Lignite
13500	Residual Oil
13600	Distillate Oil
13700	Natural Gas
13800	Wood Waste

14000 Internal Combustion - Electrical Generation

14100	Distillate Oil
14200	Natural Gas
14300	Kerosene

15000 Internal Combustion - Industrial

15100	Distillate Oil
15200	Natural Gas
15300	Gasoline

16000 Internal Combustion - Commercial

16100	Distillate Oil
16200	Natural Gas
16300	Gasoline

17000 Solid Waste Disposal - Governmental

17100 Municipal Incineration
17200 Open Burning
17300 Other

18000 Solid Waste Disposal - Commercial

18100 Incineration
18200 Open Burning
18300 Apartment

19000 Solid Waste Disposal - Industrial

19100 Incineration
19200 Open Burning

20000. Industrial Process Losses

20000 Secondary Metals (Non-Ferrous)

20100 Aluminum
20200 Copper Alloys (Bronze/Brass)
20300 Zinc
20400 Lead
20500 Other

21000 Fugitive Emissions

21100 Ore and Raw Material Handling
21200 Coal and Coke Handling
21300 Mining/Quarrying
21400 Grain Handling
21500 Processed Material Handling

22000 Wood Products

22100 Particleboard Drying
22200 Woodfiber
22300 Other

23000 Pulp and Paper (Kraft)

23100 Recovery Furnace
23200 Lime Kiln

24000 Pulp and Paper (Sulfite)

24100 Recovery System

25000 Chemical and Allied Products

25100 Inorganic Pigments
25200 Calcium Carbide Production
25300 Charcoal Manufacturing
25400 Other

26000 Petroleum Refining

26100 Process Heaters
26200 Catalytic Crackers
26300 Other

27000 Stone, Clay, Glass and Concrete

- 27100 Glass Melting Furnace
- 27200 Cement Manufacturing
- 27300 Fugitive Emissions
- 27400 Lime Production
- 27500 Gypsum Production
- 27600 Other

28000 Primary Metals Industries (Ferrous)

- 28100 Coke Manufacturing
- 28200 Iron Production
- 28300 Steel Production
- 28400 Ferroallys
- 28500 Grey Iron Foundries
- 28600 Steel Foundries

29000 Primary Metals (Non-Ferrous)

- 29100 Aluminum Reduction
- 29200 Copper Smelting, Mining & Concentrating
- 29300 Lead Smelting
- 29400 Zinc Smelting

30000. Transportation

31000 Gasoline

- 31100 Leaded Fuels
- 31200 Unleaded Fuels

32000 Diesel

- 32100 Light Duty
- 32200 Heavy Duty

33000 Composite Profiles

34000 Jet Aircraft

35000 Other

40000. Area Sources

41000 Crustal Sources

- 41100 Paved Road Dust
- 41200 Unpaved Road Dust
- 41300 Soil Dust
- 41400 Road Sanding & Salting
- 41500 Railroad Right-of-way Dust

42000 Vegetative Burning

- 42100 Woodstoves
- 42200 Fireplaces
- 42300 Other

43000 Other

- 43100 Marine Aerosol
- 43200 Residential Space Heating
- 43300 Other

D. Data Ranking Criteria

To insure the source profile data sets included in this document can be applied by the reader, each of the profiles has been evaluated and rated as to its overall quality with regard to its usefulness for receptor modeling. The data summarized is this document varies from single values to replicated source tests. Some of the data is provided with complete descriptions of the sampling methods used, source operating conditions and analytical methods employed. Other data sets are more poorly documented.

Data sets included in this document, however, do meet the following criteria:

1. Test results have been reported in units of weight percent, μg/g or other units that could be easily converted to a weight percent basis.
2. Data sets which document the control system (if any) associated with the source.

All of the data sets included in this document have been assigned a ranking (upper right corner of the profile) based on the following criteria:

1. Source Testing Method

   A key consideration in evaluating the data was the method of sample collection. Size-resolved stack samples using dilution techniques and aircraft plume sampling methods were regarded as the most desirable and received a rating of 5 compared to a rating of 1 for grab samples from dust collectors. Inclusion of condensible and/or volatile components in the profile was the single most important criteria. This is the first digit of the ranking value.

2. Analytical Methods

   Principal considerations were the analytical precision of the methods used (see Table II-3), the completeness of the analysis in explaining the composition of the aerosol, inclusion of key chemical compoeenents

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in the analysis (i.e., was Pb reported for leaded auto exhaust?) and the degree to which the data is consistent with other data sets from similar sources. This is the second digit of the ranking value.

3. Documentation

The primary concern here was the adequacy of the data set documentation in describing the emission/process and chemical composition of the input materials or fuels. If the document provided a clear description of the source, it's operating conditions, control system and the measurement techniques used, the data sets was given a rating of 3. Those data sets that provided little information on the process input materials, control or the measurement methods were given a rating of one. Peer-reviewed literature was consistently rated more highly than papers that have received less critical review. This is the third digit of the ranking value.

4. Representativeness

Those source profile that represented results from a single sample were rated less highly than those that represented the average composition of a large number of measurements. Profiles consisting of a single sample were assigned a rating of 1; 2-5 sample received a rating of 4 while an average of more thatn 5 samples was given a rating of 8. This is the fourth digit of the ranking value.

The collective ratings of the data sets has been described in the following terms:

A - Source profiles were obtained using a sound sampling and analytical methodology. Results are reported in sufficient detail to be of use to others. These profiles are recommended for use.

B - The tests were performed using a generally sound methodology but lack sufficient detail or represent too few samples to be used with full confidence.

C - The source profile reported represent a limited number of samples, were obtained using uncertain sampling or analytical methods or were obtained under poorly documented conditions.

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D - Profiles are based on a poorly documented methodology, were analyzed using qualitative techniques, represent only a single source sample and are generally recommended for qualitative use only.

Although the rating system described is subjective, it does provide a basis for excluding poor data sets. Users interested in further evaluating the quality of the data can refer to the numerical rating assigned to the testing, analytical, documentation and representativeness criteria provided.

E. The Reporting Format

Table II-5 is an example of the format used in presenting the source profiles: the date at the upper left indicates the date the profile was last reviewed and serves as means of easily updating the profiles. Next, the source name, SCC code and reference emission control of system (if any) are given. All data reported in this document were taken downstream from the control system where applicable. In the upper right, the source profile code, data ranking and ratings are presented. The body of data beneath the dashed line lists the chemical composition of the emissions, by particle size group. The column to the far left (species number) is, with the exception of the carbon and ion components, the atomic number of the element. Species numbers are used by the Chemical Mass Balance model to (a) match species included in the ambient aerosol data set to those in the source profiles and (b) to facilitate processing of the model outputs. To avoid confusions in processing large data sets, it is critical that a consistent method of numbering the species be adopted. To that end, it is highly recommended that the species numbering system noted here be adopted by the user. Since the report format dimensions limit the number of species included in these profiles, the following numbering convention should be used for species not included in Table II-5; (a) other trace elements - atomic numbers (b) total carbon (200) (c) carbonate ion (205) and (d) ammonium ion (206). Additional numbers have not been widely adopted. The chemical composition (weight percent) is presented for the fine (<2.5μm), coarse (2.5-10μm) and TSP fractions (<30μm) where possible. The associated uncertainties reported may be based on either the estimated analytical precision of the species (single samples) or the standard

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SOURCE LIBRARY

SOURCE:
CONTROLS:
SCC:

PROFILE:
RANKING:
RATING :

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE		+ -			+ -			+ -	
5	B		+ -			+ -			+ -	
9	F		+ -			+ -			+ -	
11	NA		+ -			+ -			+ -	
12	MG		+ -			+ -			+ -	
13	AL		+ -			+ -			+ -	
14	SI		+ -			+ -			+ -	
15	P		+ -			+ -			+ -	
16	S		+ -			+ -			+ -	
17	CL		+ -			+ -			+ -	
19	K		+ -			+ -			+ -	
20	CA		+ -			+ -			+ -	
21	SC		+ -			+ -			+ -	
22	TI		+ -			+ -			+ -	
23	V		+ -			+ -			+ -	
24	CR		+ -			+ -			+ -	
25	MN		+ -			+ -			+ -	
26	FE		+ -			+ -			+ -	
27	CO		+ -			+ -			+ -	
28	NI		+ -			+ -			+ -	
29	CU		+ -			+ -			+ -	
30	ZN		+ -			+ -			+ -	
31	GA		+ -			+ -			+ -	
32	GE		+ -			+ -			+ -	
33	AS		+ -			+ -			+ -	
34	SE		+ -			+ -			+ -	
35	BR		+ -			+ -			+ -	
37	RB		+ -			+ -			+ -	
38	SR		+ -			+ -			+ -	
40	ZR		+ -			+ -			+ -	
47	AG		+ -			+ -			+ -	
48	CD		+ -			+ -			+ -	
50	SN		+ -			+ -			+ -	
51	SB		+ -			+ -			+ -	
55	CS		+ -			+ -			+ -	
56	BA		+ -			+ -			+ -	
58	CE		+ -			+ -			+ -	
80	HG		+ -			+ -			+ -	
82	PB		+ -			+ -			+ -	
201	OC		+ -			+ -			+ -	
202	EC		+ -			+ -			+ -	
203	SO4		+ -			+ -			+ -	
204	NO3		+ -			+ -			+ -	
SUM(%)		0.000			0.000	+ -		0.000	+ -	

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :
REF. :

deviation (1σ) of the data sets. For those source emissions that are known to be principally composed of fine particles, the composition of all three size fractions are assumed to be similar. In these cases, appropriate notes are included at the bottom of the form or in the abstract.

The species listed in Table II-5 are those that are most commonly reported in the literature. For those profiles that include other key species, a minor component may have been deleted to permit inclusion of a non-standard component. The reader may therefore find some variability in the format.

Each entry contains either a reported value, an indication that the component was found to be below the analytical detection limit (<), not analyzed (NA) or not reported (NR). In many of the cases, uncertainties in the data were either not known or were not reported by the author.

Following the data tabulation, the percent of aerosol mass accounted for by the data is presented based on a summation of the species. The sum does not include oxygen, hydrogen, nitrogen, water or other components that were not included in the analysis. If both sulfur and sulfate are reported, the sulfur component was subtracted from the total to ensure that the sulfur was not included twice in the summation. Failure to include the carbonaceous, oxygen and hydrogen components in the aerosol characterization is often the single largest source of unexplained mass. Well designed source characterization analytical programs are typically able to account for at least 80% of the aerosol mass.

Finally, appropriate notes describing the data set, assumption used in tabulating the data or source characteristics are noted at the bottom of the page. A brief abstract of the data set, source description and technical reference follow each profile.

F. Source Profile Uncertainties

The source profile uncertainties are either analytical standard deviations if the profile is based on the analysis of only one sample; or if they are based on more than one sample, the uncertainties are the standard deviation of the distribution or analytical uncertainty, which ever is larger. Although it is possible to determine if one or multiple samples were used in the profile from the ranking code, it is not possible to determine if multiple samples were obtained from the source or from more than one source. The standard deviations of the profile distributions resulting from multiple source measurements are generally greater than those obtained from a single source. These uncertainties should be used as a guide when applying these profile values to a specific airshed. The uncertainty in the relative elemental composition will generally be much less than the uncertainties in the absolute source composition.

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G. Preparing Source Profile Composites

As more profiles for a given source-type become available the analyst must choose whether to use one single representative profile or to combine them into a profile composite. Since a composite is likely to better represent the average composition of the source emissions, it is advisable to combine results from several emission tests whenever possible. The selection of profiles to be included in the composite should be carried out in three steps: (1) selection of the best profiles, (2) profile averaging and (3) evaluation of the resultant composite. Each of these three steps is described below:

Step 1-Profile Selection

When several profiles are available for the same source, the following criteria can be applied to determine which should be included in the averaging process:

- Rating-When several profiles are rated as either excellent or good, those profiles rated as "poor" should be excluded from the composite.
- Similarity to airshed sources - When information about the source configuration, feedstocks and operating parameters for sources within the airshed exist, those profiles which best characterize sources within the airshed should be selected.
- Size fractions and chemical composition-From the remaining profiles, select those with similiar size fractions and measurement methods to those used at the airshed receptors.
- Uncertainty evaluation-Of the remaining profiles, select those which have the most realistic uncertainty estimates based on your knowledge of the sources present within the airshed. The consistency of the chemical composition of process feedstocks or coal used at a power generating station are two examples.

Step 2-Profile Compositing

In some cases, it is likely that several source profiles will remain for which none of the above criteria seem to apply.

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The most accurate profile is then likely to be a combination of the remaining profiles. Henry (55) has demonstrated that singular values decomposition statistical methods can be used to produce an optimally weighted linear combination of source profiles. Unfortunately, this method requires rather complicated computer algorithms that are still under development. Also, the variabilities reported in literature are not necessarily compatible and do not always represent the overall variability. The best current alternative is to give each of the remaining profiles an equal weight in the composite, forming a linear combination of profiles. The composite source matrix elements would then be as shown below:

$$A_{ij} = 1/K \sum_{k=1} A_{ijk} \qquad (1)$$

Where: A_{ij} = Composite source matrix element for species "i" in source "j" emissions

A_{ijk} = source matrix element for species "i" from source "j" from profile "k"

The estimated uncertainty is the standard deviation of the values from each profile:

$$\sigma A_{ij} = \left[1/K-1 \sum_{k=1}^{K} (A_{ijk} - A_{ij})^{2} \right]^{1/2} \qquad (2)$$

For example, in the case of wood-fired boilers (WFB) profiles A, B and C Table II-7 all of the profiles remain after applying the four criteria described above. Calculate the composite source matrix element for potassium (K) in the fine particle fraction. The fine potassium values drawn from these three profiles are 0.190, 0.09 and 0.224, respectively. Using equations (1) and (2) above, these yield a composite potassium value and uncertainty of 0.168 and 0.07, respectively:

$$A_{K,WFB} = 1/3[0.190 + 0.090 + 0.224] \quad (3)$$

$$= 0.168 \equiv 16.8\% \text{ Potassium}$$

$$\sigma A_{K,WFB} = \left[1/2[(0.190-0.168)^2+(0.090-0.168)^2+(0.224-0.168)^2\right]^{1/2}$$

$$= 0.0701 \equiv 7.01\% \text{ Potassium} \quad (4)$$

Table II-6 list the composite source profiles for fine and coarse wood-fired boiler emission (WFB) (profiles A, B and C) and for total municipal incinerator emissions (profiles D, E, F, and G). These are the only two source types within this document for which sufficient data exists to justify compositing. Several decisions were required in forming these composites:

- Values less than an unreported detection limit were set to zero in forming the average. If a detection limit is known, one half of this value was used in calculating the average.
- If the majority of the profiles noted that a specie was not analyzed (NA), then "NA" was reported in the composite for that species. An alternative is to average all reported species, regardless of their frequency of occurrence.
- In some cases, the uncertainty associated with a species in a single source profile may be greater than that calculated from Equation 2. All uncertainties in Table II-6 resulted from Equation 2, however. The higher uncertainty can be substituted, if desired.

Step 3 - Evaluation

Results from the Step 2 calculations may not be representative of any of the individual sources which contributed to the composite. While it is not possible to improve these results short of emission characterization sampling within the airshed under study, it is possible to evaluate the extent to which the composite profile represents each of it's constituent profiles.

TABLE II-6
COMPOSITE PROFILES FOR WOOD FIRED BOILERS AND MUNICIPAL INCINERATORS

SPECIE NUMBER	SPECIE NAME	WOOD FIRED BOILERS* FINE <2.5 UM ********* % BY WT	+ -	****** UNC	WOOD FIRED BOILERS COARSE 2.5-10UM ********* % BY WT	+-	****** UNC	MUNICIPAL INCINERATORS** TSP <30 UM ********* % BY WT	+-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	7.300	+ -	5.800	3.430	+ -	3.230	9.550	+ -	1.800
12	MG	NA	+ -	NR	0.987	+ -	0.878	1.420	+ -	1.150
13	AL	0.187	+ -	0.055	0.903	+ -	1.040	1.170	+ -	0.590
14	SI	0.833	+ -	0.375	1.750	+ -	0.770	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	6.300	+ -	2.980	4.100	+ -	4.900	4.300	+ -	7.500
17	CL	8.870	+ -	4.480	3.740	+ -	2.530	22.300	+ -	4.300
19	K	16.800	+ -	7.010	11.300	+ -	13.40	5.000	+ -	10.00
20	CA	4.500	+ -	1.400	10.400	+ -	4.900	0.767	+ -	1.330
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.013	+ -	0.023	0.069	+ -	0.060	0.193	+ -	0.127
23	V	<	+ -	NR	<	+ -	NR	0.000	+ -	0.001
24	CR	0.012	+ -	0.010	0.009	+ -	0.010	0.036	+ -	0.023
25	MN	0.373	+ -	0.158	0.500	+ -	0.205	0.083	+ -	0.062
26	FE	0.740	+ -	0.485	0.997	+ -	0.178	0.627	+ -	0.286
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.002	+ -	0.004	<	+ -	NR	0.014	+ -	0.006
29	CU	0.072	+ -	0.047	0.048	+ -	0.029	0.180	+ -	0.017
30	ZN	0.700	+ -	0.386	0.513	+ -	0.727	11.800	+ -	0.350
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	0.020	+ -	0.004
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.810	+ -	0.080	0.015	+ -	0.015	0.166	+ -	0.097
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	0.025	+ -	0.023
48	CD	<	+ -	NR	<	+ -	NR	0.115	+ -	0.047
50	SN	<	+ -	NR	<	+ -	NR	0.885	+ -	0.577
51	SB	<	+ -	NR	<	+ -	NR	0.168	+ -	0.078
55	CS	<	+ -	NR	<	+ -	NR	0.004	+ -	0.004
56	BA	<	+ -	NR	<	+ -	NR	0.007	+ -	0.010
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	5.330	+ -	9.230
82	PB	0.203	+ -	0.199	0.115	+ -	0.178	8.230	+ -	1.400
201	OC	NA	+ -	NR	10.600	+ -	0.780	NA	+ -	NR
202	EC	NA	+ -	NR	13.700	+ -	17.50	NA	+ -	NR
203	SO4	14.900	+ -	17.20	2.500	+ -	1.400	NA	+ -	NR
204	NO3	0.870	+ -	1.100	NA	+ -	NR	NA	+ -	NR
SUM(%)		63.485			65.676			72.390		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : * COMPOSITE FROM PROFILES A,B,C OF TABLE II-7.
** COMPOSITE FROM PROFILES D,E,F,G OF TABLE II-7.

TABLE II-7. Profiles for Wood Fired Boilers and Municipal Incinerators

SOURCE: WOOD-FIRED BOILER (COMPOSITE)
SCC: 1-03-009-02
CONTROLS: UNSPECIFIED

PROFILE: A
RANKING: 3324
RATING : C

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	4.500	+ -	2.500	2.600	+ -	0.800		+ -	
12	MG	0.160	+ -	0.110	0.500	+ -	0.100		+ -	
13	AL	0.190	+ -	0.180	0.330	+ -	0.130		+ -	
14	SI	1.240	+ -	0.570	2.500	+ -	0.500		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	7.100	+ -	2.200	9.700	+ -	1.100		+ -	
17	CL	4.100	+ -	1.800	5.400	+ -	0.400		+ -	
19	K	19.000	+ -	1.400	26.500	+ -	3.500		+ -	
20	CA	4.900	+ -	2.600	10.900	+ -	1.600		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.040	+ -	NR	0.110	+ -	0.030		+ -	
23	V	<	+ -	NR	0.010	+ -	0.020		+ -	
24	CR	0.020	+ -	0.010	0.020	+ -	0.010		+ -	
25	MN	0.410	+ -	0.310	0.510	+ -	0.170		+ -	
26	FE	0.660	+ -	0.660	0.870	+ -	0.370		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	0.070	+ -	0.001	0.080	+ -	0.010		+ -	
30	ZN	1.070	+ -	0.450	1.350	+ -	0.050		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.170	+ -	0.220	0.030	+ -	0.001		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	0.030	+ -	0.020	0.060	+ -	0.060		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.300	+ -	0.280	0.400	+ -	0.140		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.160	+ -	0.040	0.320	+ -	0.180		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		44.120			62.190			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COARSE FRACTION IS 2.5 - 15 UM. REF. 42. SAMPLE TAKEN DOWNSTREAM OF AN UNSPECIFIED CONTROL SYSTEM.

TABLE II-7 (Cont'd)

SOURCE: WOOD-FIRED BOILER
SCC: 1-01-009-02
CONTROLS: MULTICLONE

PROFILE: C
RANKING: 2224
RATING : B

		*********	FINE <2.5 UM	*******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIE NUMBER	SPECIE NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	0.150	+ -	0.050	0.110	+ -	0.041		+ -	
11	NA	3.400	+ -	2.900	0.690	+ -	0.960		+ -	
12	MG	<	+ -	1.000	0.460	+ -	0.170		+ -	
13	AL	0.240	+ -	0.180	0.280	+ -	0.090		+ -	
14	SI	0.760	+ -	0.370	0.960	+ -	0.140		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	8.800	+ -	2.400	0.590	+ -	0.090		+ -	
17	CL	9.500	+ -	4.900	0.830	+ -	0.760		+ -	
19	K	22.400	+ -	11.200	1.300	+ -	0.210		+ -	
20	CA	5.600	+ -	4.000	5.200	+ -	0.520		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	<	+ -	0.060	0.097	+ -	0.080		+ -	
23	V	<	+ -	0.002	0.005	+ -	0.003		+ -	
24	CR	0.015	+ -	0.006	0.007	+ -	0.001		+ -	
25	MN	0.510	+ -	0.340	0.290	+ -	0.040		+ -	
26	FE	1.260	+ -	0.880	0.920	+ -	0.220		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.006	+ -	0.004	<	+ -	0.005		+ -	
29	CU	0.120	+ -	0.060	0.023	+ -	0.004		+ -	
30	ZN	0.730	+ -	0.340	0.039	+ -	0.005		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.055	+ -	0.030	0.001	+ -	0.001		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.420	+ -	0.220	0.020	+ -	0.003		+ -	
201	OC	NA	+ -	NR	11.100	+ -	5.400		+ -	
202	EC	NA	+ -	NR	4.300	+ -	1.400		+ -	
203	SO4	33.800	+ -	9.000	1.500	+ -	0.370		+ -	
204	NO3	0.510	+ -	0.230	0.200	+ -	0.130		+ -	
SUM(%)		79.476			28.332			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : COARSE MODE 2.5-20 UM. MEAM AND STD. DEV. FROM
REF: 21 3 TESTS.

TABLE II-7 (Cont'd)

SOURCE: MUNICIPAL INCINERATOR (ALEXANDRIA, VA).
SCC: 5-01-001-01
CONTROLS: BAGHOUSE

PROFILE: D
RANKING: 2238
RATING : A

SPECIE NUMBER	SPECIE NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		9.800	+ -	2.800
12	MG		+ -			+ -		0.680	+ -	0.250
13	AL		+ -			+ -		1.600	+ -	0.800
14	SI		+ -			+ -		NA	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		NA	+ -	NR
17	CL		+ -			+ -		20.000	+ -	5.000
19	K		+ -			+ -		<	+ -	NR
20	CA		+ -			+ -		2.300	+ -	1.100
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.290	+ -	0.140
23	V		+ -			+ -		0.002	+ -	0.001
24	CR		+ -			+ -		0.049	+ -	0.035
25	MN		+ -			+ -		0.150	+ -	0.140
26	FE		+ -			+ -		0.900	+ -	0.330
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.020	+ -	0.008
29	CU		+ -			+ -		0.200	+ -	0.120
30	ZN		+ -			+ -		12.000	+ -	6.000
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.021	+ -	0.010
34	SE		+ -			+ -		0.002	+ -	0.002
35	BR		+ -			+ -		0.260	+ -	0.140
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		0.039	+ -	0.036
48	CD		+ -			+ -		0.110	+ -	0.040
50	SN		+ -			+ -		1.070	+ -	0.150
51	SB		+ -			+ -		0.240	+ -	0.240
55	CS		+ -			+ -		0.003	+ -	0.002
56	BA		+ -			+ -		0.089	+ -	0.057
58	CE		+ -			+ -		0.001	+ -	0.001
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		9.700	+ -	2.600
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			59.526		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON NR: NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : MEAN AND STD. DEV. OF 26 TSP SAMPLES. COMPOSITION COMPARABLE TO OTHER MUNICIPIAL INCINERATORS. REF. 29

TABLE II-7 (Cont'd)

SOURCE: MUNICIPAL INCINERATOR (CHICAGO)
SCC: 5-01-005-08
CONTROLS: WET SCRUBBER

PROFILE: E
RANKING: 2338
RATING : A

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		8.200	+ -	1.300
12	MG		+ -			+ -		2.800	+ -	0.800
13	AL		+ -			+ -		0.500	+ -	NR
14	SI		+ -			+ -		<	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		<	+ -	NR
17	CL		+ -			+ -		27.000	+ -	3.000
19	K		+ -			+ -		<	+ -	NR
20	CA		+ -			+ -		<	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.050	+ -	NR
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		0.010	+ -	0.002
25	MN		+ -			+ -		0.027	+ -	0.008
26	FE		+ -			+ -		0.330	+ -	0.150
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.008	+ -	0.003
29	CU		+ -			+ -		0.170	+ -	0.030
30	ZN		+ -			+ -		11.400	+ -	2.800
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.020	+ -	0.009
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.088	+ -	0.039
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		0.011	+ -	0.008
48	CD		+ -			+ -		0.150	+ -	0.040
50	SN		+ -			+ -		1.290	+ -	0.160
51	SB		+ -			+ -		0.160	+ -	0.080
55	CS		+ -			+ -		0.008	+ -	0.003
56	BA		+ -			+ -		0.022	+ -	0.013
58	CE		+ -			+ -		<	+ -	NR
74	W		+ -			+ -		8.000	+ -	NR
82	PB		+ -			+ -		6.900	+ -	1.000
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			67.144		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : AL, TI AND W VALUES APPROXIMATE. MEAN AND STD. DER. OF 11 SAMPLES.
REF:37

43<

TABLE II-7 (Cont'd)

SOURCE: MUNICIPAL INCINERATOR - AVERAGE VALUES
SCC: 5-01-005-08
CONTROLS: WET SCRUBBERS & ESP

PROFILE: F
RANKING: 2338
RATING : A

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		8.200	+ -	1.700
12	MG		+ -			+ -		1.300	+ -	1.300
13	AL		+ -			+ -		1.400	+ -	0.800
14	SI		+ -			+ -		<	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		<	+ -	NR
17	CL		+ -			+ -		20.000	+ -	7.000
19	K		+ -			+ -		<	+ -	NR
20	CA		+ -			+ -		<	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.240	+ -	0.160
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		0.049	+ -	0.038
25	MN		+ -			+ -		0.073	+ -	0.067
26	FE		+ -			+ -		0.650	+ -	0.290
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.015	+ -	0.006
29	CU		+ -			+ -		0.170	+ -	0.030
30	ZN		+ -			+ -		12.000	+ -	1.000
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.024	+ -	0.006
34	SE		+ -			+ -		0.004	+ -	0.001
35	BR		+ -			+ -		0.150	+ -	0.100
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		0.050	+ -	0.046
48	CD		+ -			+ -		0.150	+ -	0.040
50	SN		+ -			+ -		1.150	+ -	0.120
51	SB		+ -			+ -		0.210	+ -	0.050
55	CS		+ -			+ -		0.006	+ -	0.003
56	BA		+ -			+ -		0.070	+ -	0.042
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		16.000	+ -	7.000
82	PB		+ -			+ -		8.100	+ -	1.100
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			70.011		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : MEAN AND STANDARD DEVIATION VALUES FROM OVER 40 SOURCE
REF:37 TESTS AT THREE INCINERATORS.

TABLE II-7 (Cont'd)

SOURCE: MUNICIPAL REFUSE INCINERATION-COMPOSITE
SCC: 5-01-001-01
CONTROLS: ESP AND MULTICLONES

PROFILE: G
RANKING: 1324
RATING : C

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		12.000	+ -	NR
12	MG		+ -			+ -		<	+ -	NR
13	AL		+ -			+ -		0.420	+ -	NR
14	SI		+ -			+ -		<	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		13.000	+ -	NR
17	CL		+ -			+ -		27.000	+ -	NR
19	K		+ -			+ -		20.000	+ -	NR
20	CA		+ -			+ -		1.100	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.090	+ -	NR
23	V		+ -			+ -		0.003	+ -	NR
24	CR		+ -			+ -		0.085	+ -	NR
25	MN		+ -			+ -		0.033	+ -	NR
26	FE		+ -			+ -		0.610	+ -	NR
27	CO		+ -			+ -		0.002	+ -	NR
28	NI		+ -			+ -		<	+ -	NR
29	CU		+ -			+ -		0.360	+ -	NR
30	ZN		+ -			+ -		2.600	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.015	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.082	+ -	NR
37	RB		+ -			+ -		0.260	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		0.050	+ -	NR
50	SN		+ -			+ -		0.030	+ -	NR
51	SB		+ -			+ -		0.061	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		<	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		1.700	+ -	NR
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			66.501		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 50.

The following procedure, devised by Watson and Robinson (57) illustrates how this can be accomplished:

3.1. Select a set of sources, their typical contributions, measured species and source profiles which are typical of the modeling application. For example, an airshed contains four sources-soil dust, motor vehicle exhaust, a municipal incinerator and a wood-fired boiler. For simplicity, assume that each source contributes 5 µg/m3 to a 20 µg/m3 ambient sample. Assume that receptor measurements made for Al, Si, Cl, K, Ca, Ti, V, Cr, Mn,Fe, Ni, Cu, Zn, Br and Pb. Table II-8 shows the composition of soil and motor vehicle exhaust.

3.2. Generate a set of simulated chemical concentrations. For each individual source profile which was included in the composite using the fundamental mass balance equation:

$$C_i = \sum_{j=1}^{J} A_{ij} \; S_j \qquad (5)$$

For example, in the case of fine fraction potassium, A_{ij} equal to 0.05 (incinerator), 0.0259 (soils) and 0.00251 (vehicles) are drawn from Tables II-6 and II-8. Values of 0.19, 0.09 and 0.225 are the fine potassium source matrix elements for profiles A, B, and C respectively. If a wood-fired boiler with a composition similiar to profile A were impacting the receptor, the measured potassium concentration would be:

$$C_{K,A} = (.19)\,(5.0) + (.05)\,(5.0) + (.0259)\,(5.0) + (.00251)\,(5.0) \qquad (6)$$

$$C_{K,A} = 1.34 \ \mu g/m3 \text{ Potassium}$$

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Table II-8
Soil and Motor Vehicle Exhaust Source Profiles (Percent)

Species	Soils	Motor Vehicles
Al	8.130	0.251
Si	27.700	0.835
Cl	0.013	1.340
K	2.59	0.251
Ca	3.630	2.090
Ti	0.440	0.008
V	0.0135	0.000
Cr	0.010	0.0008
Mn	0.095	0.134
Fe	5.000	0.501
Ni	0.0075	0.000
Cu	0.0055	0.0585
Zn	0.0070	0.0668
Br	0.00025	9.350
Pb	0.0013	20.000

If a source with profile B or C had impacted the receptor would have been:

$$C_B = (.09)\ (5.0) + (.05)\ (5.0) + (.0259)\ (5.0) + (.00251)\ (5.0) \tag{7}$$

$$C_B = 0.842\ \mu g/m3 \text{ Potassium}$$

$$C_C = (.225)\ (5.0) + (.05)\ (5.0) + (.0259)\ (5.0) + (.00251)\ (5.0) \tag{8}$$

$$C_C = 1.52\ \mu g/m3 \text{ Potassium}$$

This procedure can be followed for each of the mass balance fitting species.

3.3. Perform a mass balance calculation on each set of simulated concentrations using the composite source profile. For example, the results of three mass balances for fine and coarse wood-fired boilers and three of the municipal incinerators are given in Table II-6. The percent measurement uncertainties are assumed for the ambient concentrations. Source profiles from Table II-7 were assumed to have 10% uncertainties. The composites from Table II-6 were assumed to have the uncertainties reported in the table.

3.4 Compare the $S_j \pm \sigma_{sj}$ interval calculated with the composite profile to the "true" S_j values used to generate the simulated data. If most of the "true" values fall outside of the uncertainty interval, then the composite profile cannot be considered to be an accurate representation of the individual profiles from which it was derived.

More precise source measurements may then be necessary before a meaningful composite can be developed. For example, the second column intervals for data sets generated from profiles B and C contain the "true" values. This composite will therefore yield incorrect results when used in most mass balance applications. All of the "true" municipal incinerator emission compositions, however, do fall within the calculated composite interval, indicating that this composite would be representative of any of it's contributing components.

This procedure does not necessarily produce the best composite profile. It does, however, give the user an objective means of evaluating the extent to which the composite represents the individual component parts.

H. Calculation PM_{10} Source Profiles

Many of the source profiles reported in this document are separated into fine (0-2.5 µm) and coarse (2.5-10 µm) size fractions.

These data sets are directly applicable to receptor modeling studies utilizing dichotomous samplers. When the fine and coarse fraction chemical compositions from a single source type differ substantially from each other, a method of combining the fine and coarse profiles must be found if the data is to be used for PM_{10} source apportionment studies. This can be done if the particle size distribution of the emissions is known. Many of these size distributions are being developed by the Environmental Protection Agency and will be reported in subsequent AP-42 publications as the fraction of total mass less than 1.0, 2.5, 6.0 and 10.0 µm. These distributions can be used to calculate PM_{10} emission compositions given fine and coarse profiles using the following procedure:

1. Find the $F_{1.0j}$, $F_{2.5j}$, $F_{6.0j}$ and $F_{10.0j}$ fractions in AP-42 for the source type "j" where:

$F_{1.0j}$ = Mass fraction < 1.0 µm in source "j" emissions

$F_{2.5j}$ = Mass fraction < 2.5 µm in source "j" emissions

$F_{6.0j}$ = Mass fraction < 6.0 µm in source "j" emissions

$F_{10.0j}$ = Mass fraction < 10.0 µm in source "j" emissions

For example, AP-42 size distribution data for wood-fired boilers yields the following information:

$F_{1.0j}$ = .113 (11.3%) $F_{2.5j}$ = 0.378 (37.8%)

$F_{6.0j}$ = .719 (71.9%) $F_{10.0j}$ = 0.842 (84.2%)

2. Calculate the PM_{10} source composition from:

$$A_{ij10} = \left(\frac{F_{2.5j}}{F_{10j}}\right) A_{ijfine} + \left(1 - \frac{F_{2.5j}}{F_{10j}}\right) A_{ijcoarse} \qquad (9)$$

Where: A_{ij10} = the PM_{10} source composition matrix element for species "i" in source "j"

50

A_{ij}Fine = The fine source composition matrix element for ij fine species "i" in source "j" contained in this library.

A_{ij}Coarse = The coarse source composition matrix element for ij coarse species "i" in source "j" contained in the library.

For example, to calculate the $_{PM}$ source composition for potassium, Table II-6 shows that $A_{K,WFB}$, Fine = 0.168 and $A_{K,WFB}$, coarse = 0.113 substituting these values into Equation 9 yields.

$$A_{K,WFB,10} = (.378/.842).168 + (1 - .378/.842).113 \qquad (10)$$

$$A_{K,WFB,10} = 0.138\%K.$$

3. Calculate the uncertainty of the matrix element by propagation of errors in quadrature:

$$\sigma_{A_{ij10}} = \left[\left(\frac{A_{ijF}}{f_{10j}}\right)^2 \sigma^2_{F_{2.5j}} + \left(\frac{F_{2.5j}}{F^2_{10j}}\right)^2 A^2_{ijF}\, \sigma^2_{F_{10j}} \right. \qquad (11)$$

$$+ \left(\frac{F_{2.5j}}{F_{10j}}\right)^2 \sigma^2_{A_{ijF}} + \left(\frac{A_{ijc}}{F_{10j}}\right) \sigma^2_{F_{2.5j}}$$

$$\left. + \left(\frac{F_{2.5j}}{F^2_{10j}}\right)^2 A^2_{ijc}\, \sigma^2_{F_{10j}} + \left(\frac{F_{2.5j}}{F_{10j}}\right) \sigma^2_{A_{ijc}} \right]^{1/2}$$

For the case of potassium in wood-fired boilers (WFB), Table II-6 shows that:

$$\sigma_{A_{k,WFB,fine}} = 0.07 \text{ and } \sigma_{A_{k,WFB,coarse}} = 0.134$$

Since they are not reported, assume that:

$$\sigma_{F_{2.5},WFB} = 0.1\ F_{2.5WFB} \text{ and } \sigma_{F10,WFB} = 0.1\ F_{10,WFB}$$

Then:

$$\begin{aligned}
\sigma_{a,k,10,\ Wood} &= \Bigg[\left(\frac{.168}{.842}\right)^2 (.0378)^2 + \left(\frac{.378}{.842^2}\right)^2 (.168)^2\ (.0842)^2 \\
&\quad + \left(\frac{.378}{.842}\right)^2 (.07)^2 + \left(\frac{.113}{.842}\right)^2 (.0378)^2 \\
&\quad + \left(\frac{.278}{(.842^2)}\right)(.113)^2\ (.0842)^2 + \left(\frac{.378}{.842}\right)^2 (.134)^2\Bigg]^{1/2} \\
&= \Big[(.569 + .569 + 9.875 + .257 \\
&\qquad .257 + 36.188) \times 10^{-4}\Big]^{1/2} \\
&= 0.0689 \qquad (12)
\end{aligned}$$

Notice that the terms containing $F_{2.5j}$ and F_{10j} are negligible in this case and could have been ignored. This will not always be the case, however. This method is specific for the 2.5 and 2.5-10 um size fractions, but if the fine and coarse source measurements are in different size fractions, it will still apply if the appropriate F_{si} are supplied. For example, if the source tests had separated the sizes at 1 um, then the 1 micron fraction $F_{1.0j}$ would have substituted for 2.5 micron fraction $F_{2.5j}$.

III. SOURCE EMISSION PROFILES

The following set of tables describes the chemical composition of source emissions. The profiles are arranged by source group into four primary categories: combustion sources, industrial process losses, transportation and area sources. To locate a profile, the reader should first refer to Table II-4, Source Profile Codes (page II-12) to note the 5-digit code assigned to the source group of interest. Note that the individual profiles within each source group are numbered sequentially. Review the reference abstract to select the profile you feel is best for your specific application. All of the profiles are organized in numerical order within this chapter.

A. Combustion Sources

Profiles within the 10000 series include those associated with external and internal combustion sources for power generation, process heat and solid waste disposal.

SOURCE: COAL-FIRED POWER PLANT
SCC: 1-01-002-01
CONTROLS: ESP

PROFILE: 11201
RANKING: 3321
RATING : B

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	15.679	+ -	0.789	14.205	+ -	0.742		+ -	
14	SI	23.837	+ -	1.192	22.872	+ -	1.191		+ -	
15	P	0.620	+ -	0.114	0.279	+ -	0.060		+ -	
16	S	3.305	+ -	0.180	0.656	+ -	0.043		+ -	
17	CL	0.094	+ -	0.041	0.102	+ -	0.013		+ -	
19	K	1.304	+ -	0.069	1.436	+ -	0.076		+ -	
20	CA	1.235	+ -	0.080	1.514	+ -	0.080		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.967	+ -	0.050	1.008	+ -	0.053		+ -	
23	V	0.079	+ -	0.007	0.066	+ -	0.006		+ -	
24	CR	0.058	+ -	0.004	0.051	+ -	0.003		+ -	
25	MN	0.043	+ -	0.003	0.046	+ -	0.003		+ -	
26	FE	8.491	+ -	0.428	9.524	+ -	0.496		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.049	+ -	0.004	0.032	+ -	0.002		+ -	
29	CU	0.031	+ -	0.003	0.027	+ -	0.002		+ -	
30	ZN	0.069	+ -	0.005	0.045	+ -	0.003		+ -	
31	GA	0.027	+ -	0.003	0.021	+ -	0.002		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.081	+ -	0.006	0.036	+ -	0.003		+ -	
34	SE	0.036	+ -	0.003	0.005	+ -	0.001		+ -	
35	BR	0.000	+ -	0.007	0.000	+ -	0.002		+ -	
37	RB	0.009	+ -	0.002	0.012	+ -	0.001		+ -	
38	SR	0.124	+ -	0.007	0.159	+ -	0.009		+ -	
40	ZR	0.076	+ -	0.003	0.035	+ -	0.007		+ -	
47	AG	0.022	+ -	0.010	0.002	+ -	0.004		+ -	
48	CD	0.012	+ -	0.013	0.000	+ -	0.006		+ -	
50	SN	0.000	+ -	0.020	0.011	+ -	0.008		+ -	
51	SB	NR	+ -	NR	NR	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.000	+ -	0.098	0.098	+ -	0.040		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	0.000	+ -	0.006	<	+ -	0.003		+ -	
82	PB	0.036	+ -	0.006	0.025	+ -	0.003		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		56.284			52.267			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :BITUMINOUS COAL. REF. 52.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
11201	52	COAL-FIRE	J.E. HOWES,J.A.COOPER AND J.E.	PHILADELPHIA BITUMINOUS COAL-FIRED POWER
11201		UTILITY	HOUCK,"SAMPLING AND ANALYSIS TO DETERMINE	PLANT BOILER STACK WITH ESP CONTROLS. PLANT
11201		BOILER	SOURCE SIGNATURES IN THE PHILADELPHIA AREA,"	OPERATING AT FULL CAPACITY (300 MW).
11201			DRAFT FINAL REPORT TO US EPA ENVIRON.	DILUTION TRAIN SAMPLES. REPRESENTATIVE
11201			SCIENCE RES. LAB. RTP, N.C. BY NEA,	SAMPLE FROM A SET OF 9. XRF ANALYSIS WITH
11201			INC.(1983)	ANALYTICAL UNCERTAINTIES.
11201				
11201				

SOURCE: OIL-FIRED POWER PLANT
SCC: 1-01-004-01
CONTROLS: MECHANICAL COLLECTOR

PROFILE: 11501
RANKING: 3321
RATING : B

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	1.468	+ -	0.068	10.126	+ -	0.992		+ -	
14	SI	2.512	+ -	0.115	20.321	+ -	1.909		+ -	
15	P	1.012	+ -	0.184	2.484	+ -	1.140		+ -	
16	S	11.027	+ -	0.513	9.718	+ -	2.498		+ -	
17	CL	0.000	+ -	0.129	0.000	+ -	0.601		+ -	
19	K	0.217	+ -	0.011	0.386	+ -	0.386		+ -	
20	CA	2.353	+ -	0.110	10.805	+ -	1.141		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.129	+ -	0.129	1.122	+ -	0.110		+ -	
23	V	1.504	+ -	0.069	1.944	+ -	0.370		+ -	
24	CR	0.051	+ -	0.090	0.127	+ -	0.050		+ -	
25	MN	0.039	+ -	0.002	0.069	+ -	0.015		+ -	
26	FE	2.043	+ -	0.094	3.715	+ -	0.578		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	2.036	+ -	0.093	1.208	+ -	0.422		+ -	
29	CU	NR	+ -	NR	NR	+ -	NR		+ -	
30	ZN	1.095	+ -	0.050	0.710	+ -	0.231		+ -	
31	GA	0.010	+ -	0.002	0.030	+ -	0.015		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.008	+ -	0.007	0.022	+ -	0.053		+ -	
34	SE	0.003	+ -	0.002	0.000	+ -	0.010		+ -	
35	BR	0.004	+ -	0.002	0.010	+ -	0.009		+ -	
37	RB	0.003	+ -	0.001	0.000	+ -	0.007		+ -	
38	SR	0.031	+ -	0.002	0.159	+ -	0.020		+ -	
40	ZR	0.003	+ -	0.004	0.166	+ -	0.047		+ -	
42	MO	0.169	+ -	0.008	0.085	+ -	0.050		+ -	
48	CD	0.002	+ -	0.003	0.000	+ -	0.050		+ -	
50	SN	0.019	+ -	0.005	0.000	+ -	0.070		+ -	
51	SB	0.074	+ -	0.010	0.230	+ -	0.145		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.219	+ -	0.025	0.000	+ -	0.358		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	0.000	+ -	0.001	0.000	+ -	0.012		+ -	
82	PB	1.423	+ -	0.065	0.422	+ -	0.278		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		27.454			63.859			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COARSE FRACTION IS 2.5-7.0 UM D50. RESIDUAL OIL FIRED BOILER. REF. 52.

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13-Jun-85                                   SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE    |                  REFERENCE                      |REFERENCE ABSTRACT                              |
NUMBER |NUMBER   |GROUP     |                                                 |                                                |
--------------------------------------------------------------------------------------------------------------------------------|
 11501 |       52 |OIL-FIRED|J.E. HOWES,J.A.COOPER AND J.E.                   |OIL-FIRED POWER PLANT EQUIPPED WITH             |
 11501 |          |UTILITY  |HOUCK,"SAMPLING AND ANALYSIS TO DETERMINE        |MECHANICAL COLLECTOR CONTROLS BURNING NO. 6     |
 11501 |          |BOILER   |SOURCE SIGNATURES IN THE PHILADELPHIA AREA,"     |FUEL OIL. 460 MW OUTPUT DURING SAMPLE           |
 11501 |          |         |DRAFT FINAL REPORT TO US EPA ENVIRON.            |COLLECTION. SAMPLED WITH A DILUTION TRAIN.      |
 11501 |          |         |SCIENCE RES. LAB. RTP, N.C. BY NEA,              |PROFILE REPRESENTS A SINGLE TYPICAL SAMPLE      |
 11501 |          |         |INC.(1983)                                       |SELECTED FROM A GROUP OF 9. XRF DATA WITH       |
 11501 |          |         |                                                 |ANALYTICAL UNCERTAINTIES.                       |
 11501 |          |         |                                                 |                                                |
```

SOURCE: WOOD-FIRED BOILER
SCC: 1-01-009-02
CONTROLS: MULTICLONE

PROFILE: 11801
RANKING: 2224
RATING : B

			FINE			COARSE			TSP	
SPECIE	SPECIE	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	0.150	+ -	0.050	0.110	+ -	0.041		+ -	
11	NA	3.400	+ -	2.900	0.690	+ -	0.960		+ -	
12	MG	<	+ -	1.000	0.460	+ -	0.170		+ -	
13	AL	0.240	+ -	0.180	0.280	+ -	0.090		+ -	
14	SI	0.760	+ -	0.370	0.960	+ -	0.140		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	8.800	+ -	2.400	0.590	+ -	0.090		+ -	
17	CL	9.500	+ -	4.900	0.830	+ -	0.760		+ -	
19	K	22.400	+ -	******	1.300	+ -	0.210		+ -	
20	CA	5.600	+ -	4.000	5.200	+ -	0.520		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	<	+ -	0.060	0.097	+ -	0.080		+ -	
23	V	<	+ -	0.002	0.005	+ -	0.003		+ -	
24	CR	0.015	+ -	0.006	0.007	+ -	0.001		+ -	
25	MN	0.510	+ -	0.340	0.290	+ -	0.040		+ -	
26	FE	1.260	+ -	0.880	0.920	+ -	0.220		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.006	+ -	0.004	<	+ -	0.005		+ -	
29	CU	0.120	+ -	0.060	0.023	+ -	0.004		+ -	
30	ZN	0.730	+ -	0.340	0.039	+ -	0.005		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.055	+ -	0.030	0.001	+ -	0.001		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.420	+ -	0.220	0.020	+ -	0.003		+ -	
201	OC	NA	+ -	NR	11.100	+ -	5.400		+ -	
202	EC	NA	+ -	NR	4.300	+ -	1.400		+ -	
203	SO4	33.800	+ -	9.000	1.500	+ -	0.370		+ -	
204	NO3	0.510	+ -	0.230	0.200	+ -	0.130		+ -	
SUM(%)		79.476			28.332			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : COARSE MODE 2.5-20 UM. MEAM AND STD. DEV. FROM
REF: 21 3 TESTS.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
11801	21	WOOD-FIRED BOILER	J.E. CORE, "WILLAMETTE VALLEY FIELD AND SLASH BURNING IMPACT AIR QUALITY SURVEILLANCE PROGRAM; VOLUME 3," STATE OF OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (1979). TABLE 5.2.3. PROFILES DEVELOPED DURING THIS STUDY WERE TAKEN USING A 2 STAGE VIRTUAL IMPACTOR (2.5 UM, D50) ADAPTED FOR SOURCE TESTING. THE SAMPLING TRAIN INCLUDED PROVISION FOR DILUTION AIR TO CAPTURE CONDENSIBLES. COARSE FRACTION APPROXIMATELY 20 UM, D50. SAMPLES ANALYZED BY XRF (5 ELEMENTS), ION CHROMATOGRAPHY AND CARBON OXIDATION. THE PACS PROFILE SET WAS SUPPLEMENTED WITH TEST OF STREET AND SOIL DUST, CHARCOAL MFG, HOG FUEL BOILERS AND SILICA MFG AS PART OF THIS STUDY. F, NA AND MG WATER SOLUBLE IONS.	AVERAGE AND STANDARD DEVIATION VALUES OF 3 SOURCE TESTS OF A 35,000 LB STEAM PER HOUR OUTPUT HOGGED FUEL BOILER (DUTCH OVEN). SAMPLE TAKEN DOWNSTREAM FROM MULTICLONE CONTROL SYSTEM. FUEL IS DOUGLAS FIR BARK AND WOOD. APPROX. 20% OF MASS <20 UM.

SOURCE: WOOD FIRED BOILER
SCC: 1-02-009-02
CONTROLS: WET SCRUBBER

PROFILE: 12704
RANKING: 3324
RATING : B

SPECIES	SPECIES	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	0.020	+ -	0.020	NA	+ -	NR	NA	+ -	NR
5	B	0.250	+ -	0.130	NA	+ -	NR	NA	+ -	NR
9	F	1.600	+ -	0.400	NA	+ -	NR	2.275	+ -	0.378
11	NA	7.260	+ -	0.730	NA	+ -	NR	NA	+ -	NR
12	MG	1.140	+ -	0.114	NA	+ -	NR	NA	+ -	NR
13	AL	1.410	+ -	0.990	NA	+ -	NR	1.603	+ -	0.857
14	SI	0.910	+ -	0.550	NA	+ -	NR	1.175	+ -	0.470
15	P	0.760	+ -	0.250	NA	+ -	NR	0.856	+ -	0.213
16	S	2.600	+ -	0.260	NA	+ -	NR	2.742	+ -	0.274
17	CL	20.400	+ -	2.200	NA	+ -	NR	19.530	+ -	2.152
19	K	16.300	+ -	3.300	NA	+ -	NR	15.505	+ -	2.990
20	CA	3.700	+ -	2.100	NA	+ -	NR	4.120	+ -	1.793
22	TI	0.048	+ -	0.021	NA	+ -	NR	0.056	+ -	0.018
23	V	0.005	+ -	0.006	NA	+ -	NR	0.009	+ -	0.005
24	CR	0.008	+ -	0.002	NA	+ -	NR	0.009	+ -	0.002
25	MN	0.340	+ -	0.170	NA	+ -	NR	0.373	+ -	0.145
26	FE	0.980	+ -	0.430	NA	+ -	NR	1.071	+ -	0.366
27	CO	0.060	+ -	0.060	NA	+ -	NR	NA	+ -	NR
28	NI	0.005	+ -	0.005	NA	+ -	NR	0.005	+ -	0.004
29	CU	0.037	+ -	0.007	NA	+ -	NR	0.033	+ -	0.006
30	ZN	0.640	+ -	0.210	NA	+ -	NR	0.601	+ -	0.179
33	AS	0.028	+ -	0.007	NA	+ -	NR	0.025	+ -	0.006
34	SE	0.002	+ -	0.002	NA	+ -	NR	0.002	+ -	0.002
35	BR	0.181	+ -	0.020	NA	+ -	NR	0.175	+ -	0.020
37	RB	0.045	+ -	0.006	NA	+ -	NR	0.045	+ -	0.005
38	SR	0.035	+ -	0.016	NA	+ -	NR	0.040	+ -	0.014
40	ZR	0.008	+ -	0.008	NA	+ -	NR	0.011	+ -	0.008
42	MO	0.025	+ -	0.013	NA	+ -	NR	0.030	+ -	0.031
46	PD	0.004	+ -	0.004	NA	+ -	NR	0.006	+ -	0.004
47	AG	0.007	+ -	0.007	NA	+ -	NR	0.010	+ -	0.007
48	CD	0.002	+ -	0.020	NA	+ -	NR	0.007	+ -	0.018
49	IN	0.010	+ -	0.010	NA	+ -	NR	0.015	+ -	0.011
50	SN	0.013	+ -	0.013	NA	+ -	NR	0.019	+ -	0.013
51	SB	0.024	+ -	0.034	NA	+ -	NR	0.029	+ -	0.045
56	BA	0.055	+ -	0.055	NA	+ -	NR	0.087	+ -	0.062
57	LA	0.065	+ -	0.065	NA	+ -	NR	0.103	+ -	0.073
58	CE	0.004	+ -	0.003	NA	+ -	NR	0.005	+ -	0.003
80	HG	0.206	+ -	0.033	NA	+ -	NR	0.210	+ -	0.031
82	PB	1.300	+ -	1.300	NA	+ -	NR	NA	+ -	NR
201	OC	5.600	+ -	0.600	NA	+ -	NR	7.070	+ -	0.858
202	EC	4.600	+ -	0.600	NA	+ -	NR	4.450	+ -	0.536
203	SO4	7.000	+ -	1.100	NA	+ -	NR	7.285	+ -	0.982
204	NO3	0.085	+ -	0.085	NA	+ -	NR	0.134	+ -	0.095
SUM(%)		77.772			0.000			69.721		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 49.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
12704	49	WOOD-	J.A. COOPER, C.FRAZIER AND J.E. HOUCH,	AVERAGE OF THREE REPLICATE SAMPLES FROM A
12704		FIRED	SEATTLE-TACOMA AEROSOL CHARACTERIZATION	SINGLE HOGGED FUEL BOILER STACK. STACK
12704		BOILER	STUDY" DRAFT FINAL REPORT TO THE PUGET SOUND	EQUIPPED WITH A WET SCRUBBER. SAMPLES
12704			AIR POLLUTION CONTROL AGENCY. NEA,INC. 1983.	COLLECTED WITH A DILUTION SAMPLER EQUIPPED
12704				WITH A TWO-STAGE VIRTUAL IMPACTOR.
12704				

SOURCE: RESIDUAL OIL COMBUSTION (COMMERCIAL)
SCC 1-03-004-01
CONTROLS: NONE

PROFILE: 13501
RANKING: 2328
RATING : A

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	0.053	+ -	0.019	0.052	+ -	0.019		+ -	
11	NA	3.500	+ -	1.700	3.500	+ -	1.700		+ -	
12	MG	<	+ -	3.000	<	+ -	3.000		+ -	
13	AL	0.530	+ -	0.240	0.530	+ -	0.240		+ -	
14	SI	0.960	+ -	0.480	0.960	+ -	0.480		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	13.300	+ -	2.400	13.300	+ -	2.400		+ -	
17	CL	<	+ -	0.100	<	+ -	0.100		+ -	
19	K	0.280	+ -	0.100	0.280	+ -	0.100		+ -	
20	CA	1.580	+ -	0.640	1.580	+ -	0.640		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.110	+ -	0.038	0.110	+ -	0.038		+ -	
23	V	3.440	+ -	0.750	3.440	+ -	0.750		+ -	
24	CR	0.047	+ -	0.015	0.047	+ -	0.015		+ -	
25	MN	0.046	+ -	0.013	0.046	+ -	0.013		+ -	
26	FE	2.970	+ -	0.610	2.970	+ -	0.610		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	5.360	+ -	1.210	5.360	+ -	1.210		+ -	
29	CU	0.075	+ -	0.025	0.075	+ -	0.025		+ -	
30	ZN	0.400	+ -	0.180	0.400	+ -	0.180		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.013	+ -	0.021	0.013	+ -	0.021		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.110	+ -	0.064	0.110	+ -	0.064		+ -	
201	OC	7.800	+ -	6.200	7.800	+ -	6.200		+ -	
202	EC	2.420	+ -	2.500	2.420	+ -	2.500		+ -	
203	SO4	48.100	+ -	11.90	48.100	+ -	11.90		+ -	
204	NO3	0.650	+ -	0.440	0.650	+ -	0.440		+ -	
SUM(%)		91.744			91.743			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46.

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PROFILE|REFERENCE|SOURCE   |                 REFERENCE                  |REFERENCE ABSTRACT                            |
NUMBER |NUMBER   |GROUP    |                                            |                                              |
---------------------------------------------------------------------------------------------------------------------|
 13501 |       46 |RESIDUAL |J.G.WATSON,"CHEMICAL ELEMENT BALANCE       |AVERAGE OF 8 SAMPLES OF RESIDUAL OIL          |
 13501 |          |OIL      |RECEPTOR MODEL METHODOLOGY FOR SOURCES OF  |COMBUSTION EMISSIONS FROM SCHOOLS,            |
 13501 |          |         |FINE AND TOTAL SUSPENDED PARTICULATE MATTER|HOSPITALS, APARTMENTS AND INDUSTRIAL BOILERS.|
 13501 |          |         |IN PORTLAND,OREGON," PHD THESIS. OREGON    |                                              |
 13501 |          |         |GRADUATE CENTER(1979)                      |                                              |
 13501 |          |         |                                           |                                              |
 13501 |          |         |PROFILES DEVELOPED DURING THE PACS STUDY   |                                              |
 13501 |          |         |WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR |                                              |
 13501 |          |         |(2.0 UM D50) WITH A METHOD 5 HEATED PROBE. |                                              |
 13501 |          |         |NO DILUTION AIR. UPPER CUT POINT ABOUT 20  |                                              |
 13501 |          |         |UM, D50. ANALYSIS BY XRF AND INNA, IC AND  |                                              |
 13501 |          |         |CARBON OXIDATION(CORRECTED FOR ARTIFACT EC).|                                             |
 13501 |          |         |SINCE NO DILUTION AIR WAS USED DURING      |                                              |
 13501 |          |         |SAMPLING, THE PACS PROFILES TEND TO        |                                              |
 13501 |          |         |UNDERESTIMATE ORGANIC CARBON.              |                                              |
 13501 |          |         |                                           |                                              |
 13501 |          |         |                                           |                                              |
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SOURCE: MUNICIPAL INCINERATOR (PHILADELPHIA)
SCC: 6-01-001-01
CONTROLS: ESP(INOPERATIVE)

PROFILE: 17105
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	0.819	+ -	0.117	5.827	+ -	0.466		+ -	
14	SI	1.442	+ -	0.067	8.570	+ -	0.581		+ -	
15	P	0.543	+ -	0.098	0.894	+ -	0.299		+ -	
16	S	1.906	+ -	0.301	3.487	+ -	0.601		+ -	
17	CL	21.299	+ -	0.985	16.678	+ -	2.218		+ -	
19	K	6.464	+ -	0.305	4.491	+ -	0.640		+ -	
20	CA	0.223	+ -	0.030	5.870	+ -	0.381		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.012	+ -	0.003	1.097	+ -	0.069		+ -	
23	V	0.000	+ -	0.001	0.024	+ -	0.008		+ -	
24	CR	0.015	+ -	0.001	0.111	+ -	0.009		+ -	
25	MN	0.018	+ -	0.001	0.091	+ -	0.008		+ -	
26	FE	0.279	+ -	0.013	1.874	+ -	0.129		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.032	+ -	0.002	0.085	+ -	0.010		+ -	
29	CU	0.148	+ -	0.007	0.053	+ -	0.015		+ -	
30	ZN	11.503	+ -	0.525	4.012	+ -	0.918		+ -	
31	GA	0.016	+ -	0.011	0.000	+ -	0.022		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.000	+ -	0.031	0.000	+ -	0.071		+ -	
34	SE	0.003	+ -	0.011	0.003	+ -	0.020		+ -	
35	BR	0.563	+ -	0.027	0.375	+ -	0.057		+ -	
37	RB	0.016	+ -	0.002	0.005	+ -	0.008		+ -	
38	SR	0.009	+ -	0.002	0.023	+ -	0.008		+ -	
40	ZR	0.000	+ -	0.014	0.000	+ -	0.039		+ -	
42	MO	0.036	+ -	0.003	0.003	+ -	0.023		+ -	
48	CD	0.284	+ -	0.016	0.024	+ -	0.049		+ -	
50	SN	0.829	+ -	0.041	0.004	+ -	0.089		+ -	
51	SB	0.442	+ -	0.028	0.086	+ -	0.113		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.020	+ -	0.029	0.000	+ -	0.242		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	0.009	+ -	0.004	0.011	+ -	0.012		+ -	
82	PB	8.116	+ -	0.371	2.428	+ -	0.633		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		55.046			56.126			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 52.

```
13-Jun-85                                        SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE   |                  REFERENCE                   |REFERENCE ABSTRACT                            |
NUMBER |NUMBER   |GROUP    |                                              |                                              |
-------------------------------------------------------------------------------------------------------------------------|
 17105 |      52 |MUNICIPAL|J.E. HOWES,J.A.COOPER AND J.E.                |PHILADELPHIA MUNICIPAL INCINERATOR EQUIPPED   |
 17105 |         |INCINER. |HOUCK,"SAMPLING AND ANALYSIS TO DETERMINE     |WITH ESP CONTROLS WHICH WERE NOT OPERATIONAL  |
 17105 |         |         |SOURCE SIGNATURES IN THE PHILADELPHIA AREA,"  |AT THE TIME OF SAMPLING. SAMPLES COLLECTED    |
 17105 |         |         |DRAFT FINAL REPORT TO US EPA ENVIRON.         |WITH A DILUTION SAMPLER. A REPRESENTATIVE     |
 17105 |         |         |SCIENCE RES. LAB. RTP, N.C. BY NEA,           |SAMPLE FROM A GROUP OF 10. XRF ANALYSIS AND   |
 17105 |         |         |INC.(1983)                                    |ANALYTICAL UNCERTAINITIES.                    |
 17105 |         |         |                                              |                                              |
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SOURCE: MUNICIPAL INCINERATOR COMPOSITE
SCC: 6-01-001-01
CONTROLS: ESP,BAGHOUSE AND SCRUBBERS

PROFILE: 17106
RANKING: 3321
RATING: B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM +-	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		9.550	+ -	1.800
12	MG		+ -			+ -		1.420	+ -	1.150
13	AL		+ -			+ -		1.170	+ -	0.590
14	SI		+ -			+ -		<	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		4.300	+ -	7.500
17	CL		+ -			+ -		22.300	+ -	4.300
19	K		+ -			+ -		5.000	+ -	10.0
20	CA		+ -			+ -		0.767	+ -	1.330
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.193	+ -	0.127
23	V		+ -			+ -		0.000	+ -	0.001
24	CR		+ -			+ -		0.036	+ -	0.023
25	MN		+ -			+ -		0.083	+ -	0.062
26	FE		+ -			+ -		0.627	+ -	0.286
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.014	+ -	0.006
29	CU		+ -			+ -		0.180	+ -	0.017
30	ZN		+ -			+ -		11.800	+ -	0.350
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.020	+ -	0.004
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.166	+ -	0.097
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		0.025	+ -	0.023
48	CD		+ -			+ -		0.115	+ -	0.047
50	SN		+ -			+ -		0.885	+ -	0.577
51	SB		+ -			+ -		0.168	+ -	0.078
55	CS		+ -			+ -		0.004	+ -	0.004
56	BA		+ -			+ -		0.007	+ -	0.010
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		5.330	+ -	9.230
82	PB		+ -			+ -		8.230	+ -	1.400
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			72.390		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
NOTES: ** COMPOSITE FROM PROFILES D,E,F,G OF TABLE II-7.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
17106	COMPOSITE	MUNICIPAL	COMPOSITE PROFILE CALCULATED FROM PROFILES	
17106		INCINER.	17101,17102,17103 AND 17104.	
17106				

SOURCE: SCRAP COPPER INCINERATOR
SCC: 3-04-002-09
CONTROLS: NONE

PROFILE: 19101
RANKING: 3321
RATING : D

SPECIE NUMBER	SPECIE NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		NA	+ -	NR
12	MG		+ -			+ -		NA	+ -	NR
13	AL		+ -			+ -		<	+ -	NR
14	SI		+ -			+ -		<	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		0.115	+ -	0.011
17	CL		+ -			+ -		<	+ -	NR
19	K		+ -			+ -		<	+ -	NR
20	CA		+ -			+ -		<	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		<	+ -	NR
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		<	+ -	NR
25	MN		+ -			+ -		<	+ -	NR
26	FE		+ -			+ -		<	+ -	NR
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		<	+ -	NR
29	CU		+ -			+ -		0.071	+ -	NR
30	ZN		+ -			+ -		<	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		<	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		<	+ -	NR
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		<	+ -	NR
50	SN		+ -			+ -		<	+ -	NR
51	SB		+ -			+ -		<	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		<	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		<	+ -	NR
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			0.186		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : INCINERATION OF MACHINING OIL AND PLASTIC INSULATIN FROM COPPER SCRAP.
REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
19101	43	COPPER	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	SCRAP COPPER INCINERATOR STACK. PLUME
19101		INCINERA-	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	SAMPLE COLLECTED WITH LOW-VOLUME SAMPLER.
19101		TOR	THE STATE OF MONTANA. NEA, INC.(1982)	INCINERATION OF MACHINERY OIL AND PLASTIC
19101				INSULATION FROM COPPER SCRAP.
19101				

B. Industrial Process Losses

Profiles assigned to the 20000 series are those associated with industrial fugitive and process losses.

SOURCE: ALUMINUM FOUNDRY-REVERB. FURNACE
SCC: 3-04-001-01
CONTROLS: NONE

PROFILE: 20101
RANKING: 1121
RATING : D

SPECIE NUMBER	SPECIE NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	<	+ -	NR	<	+ -	NR	<	+ -	NR
17	CL	11.000	+ -	NR	11.000	+ -	NR	11.000	+ -	NR
19	K	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
20	CA	3.000	+ -	NR	3.000	+ -	NR	3.000	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
25	MN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
26	FE	6.000	+ -	NR	6.000	+ -	NR	6.000	+ -	NR
27	CO	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
28	NI	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
29	CU	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
30	ZN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
201	OC	13.000	+ -	NR	13.000	+ -	NR	13.000	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	16.000	+ -	NR	16.000	+ -	NR	16.000	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		51.550			51.550			51.550		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON NR: NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : OTHER COMPONENTS, PRINCIPALLY AL203, 51%. ALL SIZE FRACTIONS ESTIMATED TO BE SIMILAR. POOR QUALITY DATA.
REF: 10

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13-Jun-85                                   SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE   |                  REFERENCE                   |REFERENCE ABSTRACT                              |
NUMBER |NUMBER   |GROUP    |                                              |                                                |
-------------------------------------------------------------------------------------------------------------------------|
 20101 |       10|ALUMINUM |H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.    |SECONDARY ALUMINUM SMELTER USING A 35 TON       |
 20101 |         |SMELTER  |BRUNETZ," FINE PARTICLE EMISSIONS FROM        |REVERBATORY FURNACE MELTING SCRAP WITH          |
 20101 |         |         |STATIONARY AND MISCELLANEOUS SOURCES IN THE   |ALLOYING COMPONENTS, CU,MG,SI.  NO EMISSION     |
 20101 |         |         |SOUTH COAST AIR BASIN,"KVB CORP. NO           |CONTROLS GAS FIRED . PRODUCING CASTING          |
 20101 |         |         |5806-783(1979).  NTIS #PB 293923.             |BILLET FOR EXTRUSION. AVERAGE VALUES FOR 2      |
 20101 |         |         |                                              |TESTS.                                          |
 20101 |         |         |                                              |                                                |
 20101 |         |         |- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --|                                                |
 20101 |         |         |ALL PROFILES FROM THIS REFERENCE WERE         |                                                |
 20101 |         |         |OBTAINED USING THE EPA SOURCE ASSESSMENT      |                                                |
 20101 |         |         |SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A  |                                                |
 20101 |         |         |HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1  |                                                |
 20101 |         |         |UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND  |                                                |
 20101 |         |         |IMPINGERS OPERATED ISOKINETICALLY. CYCLONE    |                                                |
 20101 |         |         |AND FILTER CATCHES WERE ANALYZED BY XRF       |NOTE: ORIGIONAL DATA REPORTED AS                |
 20101 |         |         |(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE  |TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS    |
 20101 |         |         |OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT  |(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND       |
 20101 |         |         |BE CONSIDERED QUANTITATIVE.  AA WAS           |0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS     |
 20101 |         |         |OCASSIONALLY USED AS A QA MEASURE. WATER      |DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE   |
 20101 |         |         |SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE      |ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES     |
 20101 |         |         |METHOD) AND CARBON (OXIDATION/NDIR            | >10,3-10,1-3,<1 UM. TSP PROFILE IS KVB         |
 20101 |         |         |DETECTION); CARBONATE AND "VOLATILE" CARBON   |COMPOSITE PROFILE.                              |
 20101 |         |         |OXIDIZED AT 150 DEG.C WERE                    |                                                |
 20101 |         |         |ROUTINE.UNFORTUANTELY, SEVERAL OF THE         |                                                |
 20101 |         |         |LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN      |                                                |
 20101 |         |         |REPORTED AS A SUM. THIS DOCUMENT IS           |                                                |
 20101 |         |         |REPRESENTS A RICH SOURCE OF INFORMATION.      |                                                |
 20101 |         |         |                                              |                                                |
```

SOURCE: SECONDARY ALUMINUM PLANT-DROSS RECOVERY FURNACE
SCC: 3-04-001-07
CONTROLS: BAGHOUSE

PROFILE: 20102
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	1.447	+ -	0.082	4.857	+ -	0.447		+ -	
14	SI	6.412	+ -	0.315	11.501	+ -	1.055		+ -	
15	P	0.373	+ -	0.068	0.374	+ -	0.114		+ -	
16	S	2.883	+ -	0.156	1.959	+ -	0.261		+ -	
17	CL	23.212	+ -	1.139	17.746	+ -	1.875		+ -	
19	K	10.035	+ -	0.490	10.295	+ -	1.017		+ -	
20	CA	0.079	+ -	0.030	0.764	+ -	0.090		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.025	+ -	0.003	0.112	+ -	0.015		+ -	
23	V	0.006	+ -	0.001	0.010	+ -	0.005		+ -	
24	CR	0.028	+ -	0.003	0.063	+ -	0.009		+ -	
25	MN	0.010	+ -	0.002	0.037	+ -	0.007		+ -	
26	FE	0.251	+ -	0.015	1.319	+ -	0.120		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.033	+ -	0.003	0.052	+ -	0.010		+ -	
29	CU	0.042	+ -	0.004	0.104	+ -	0.014		+ -	
30	ZN	0.079	+ -	0.005	0.202	+ -	0.022		+ -	
31	GA	0.000	+ -	0.001	0.000	+ -	0.004		+ -	
32	GE	<	+ -	0.005	<	+ -	NR		+ -	
33	AS	0.011	+ -	0.005	0.005	+ -	0.014		+ -	
34	SE	0.016	+ -	0.002	0.013	+ -	0.005		+ -	
35	BR	0.065	+ -	0.004	0.039	+ -	0.009		+ -	
37	RB	0.004	+ -	0.003	0.000	+ -	0.007		+ -	
38	SR	0.005	+ -	0.003	0.003	+ -	0.009		+ -	
40	ZR	0.002	+ -	0.015	0.039	+ -	0.044		+ -	
47	AG	0.020	+ -	0.014	0.061	+ -	0.043		+ -	
48	CD	0.000	+ -	0.019	0.083	+ -	0.057		+ -	
50	SN	0.047	+ -	0.025	0.000	+ -	0.079		+ -	
51	SB	0.597	+ -	0.068	0.353	+ -	0.162		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.036	+ -	0.113	0.000	+ -	0.347		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	0.000	+ -	0.003	0.000	+ -	0.010		+ -	
82	PB	0.079	+ -	0.009	0.094	+ -	0.023		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		45.797			50.085			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 52.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
20102	52	SECONDARY	J.E. HOWES,J.A.COOPER AND J.E.	ROTARY DROSS RECOVERY FURNACE WITH BAGHOUSE
20102		ALUMINUM	HOUCK,"SAMPLING AND ANALYSIS TO DETERMINE	CONTROL SYSTEM. SAMPLES COLLECTED WITH
20102			SOURCE SIGNATURES IN THE PHILADELPHIA AREA,"	DILUTION SAMPLING TRAIN. XRF ANALYSIS WITH
20102			DRAFT FINAL REPORT TO US EPA ENVIRON.	ANALYTICAL UNCERTAINTIES.
20102			SCIENCE RES. LAB. RTP, N.C. BY NEA,	
20102			INC.(1983)	
20102				

SOURCE: SECONDARY LEAD SMELTER - BLAST FURNACE
SCC: 3-04-004-03
CONTROLS: BAGHOUSE

PROFILE: 20401
RANKING: 2121
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -			+ -		<	+ -	NR
5	B		+ -			+ -		<	+ -	NR
9	F		+ -			+ -		<	+ -	NR
11	NA		+ -			+ -		3.000	+ -	NR
12	MG		+ -			+ -		0.001	+ -	NR
13	AL		+ -			+ -		0.003	+ -	NR
14	SI		+ -			+ -		0.300	+ -	NR
15	P		+ -			+ -		0.050	+ -	NR
16	S		+ -			+ -		<	+ -	NR
17	CL		+ -			+ -		19.300	+ -	NR
19	K		+ -			+ -		1.000	+ -	NR
20	CA		+ -			+ -		0.030	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		<	+ -	NR
23	V		+ -			+ -		0.001	+ -	NR
24	CR		+ -			+ -		0.001	+ -	NR
25	MN		+ -			+ -		0.003	+ -	NR
26	FE		+ -			+ -		0.100	+ -	NR
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.001	+ -	NR
29	CU		+ -			+ -		0.030	+ -	NR
30	ZN		+ -			+ -		0.300	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.300	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		<	+ -	NR
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		0.700	+ -	NR
50	SN		+ -			+ -		2.000	+ -	NR
51	SB		+ -			+ -		0.200	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		<	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		50.000	+ -	NR
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		7.530	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			84.850		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : 0.15% C; SEMI QUANTITATIVE DATA. REF. 23.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
20401	23	LEAD	J.E. HOWES,W.M.HENRY AND R.N.	77 TON/DAY SECONDARY LEAD SMELTER BLAST
20401		SMELTER	PESUT,"EVALUATION OF STATIONARY SOURCE	FURNACE FED WITH COKE, CAST IRON SCRAP,
20401			PARTICULATE MEASUREMENTS METHODS-VOLUME V,	BATTERIES, LIMESTONE, SLAG AND DROSSES.
20401			SECONDARY LEAD SMELTERS," US EPA	PRODUCING 4800 LB/SHIFT. SAMPLES OBTAINED BY
20401			600/2-79-116 (1979). TABLES 5 AND 6.	ISOKINETIC METHOD 5 DOWNSTREAM OF A
20401				BAGHOUSE.ANALYSIS BY OPTICAL EMISSION SPEC
20401				

SOURCE: ZINC OXIDE KILN
SCC: 3-04-999-99
CONTROLS: UNKNOWN

PROFILE: 20501
RANKING: 3321
RATING : C

		FINE			COARSE			TSP		
		*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		NA	+ -	NR
12	MG		+ -			+ -		NA	+ -	NR
13	AL		+ -			+ -		0.423	+ -	0.045
14	SI		+ -			+ -		0.574	+ -	0.057
15	P		+ -			+ -		0.188	+ -	0.019
16	S		+ -			+ -		3.290	+ -	0.516
17	CL		+ -			+ -		0.427	+ -	0.057
19	K		+ -			+ -		0.615	+ -	0.061
20	CA		+ -			+ -		0.231	+ -	0.023
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.031	+ -	NR
23	V		+ -			+ -		0.011	+ -	NR
24	CR		+ -			+ -		0.018	+ -	NR
25	MN		+ -			+ -		0.021	+ -	NR
26	FE		+ -			+ -		0.188	+ -	0.019
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.106	+ -	0.011
29	CU		+ -			+ -		0.254	+ -	0.025
30	ZN		+ -			+ -		63.182	+ -	6.318
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		1.184	+ -	0.118
34	SE		+ -			+ -		0.377	+ -	0.038
35	BR		+ -			+ -		0.120	+ -	0.012
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
46	PD		+ -			+ -		0.055	+ -	0.011
47	AG		+ -			+ -		0.036	+ -	NR
48	CD		+ -			+ -		0.080	+ -	0.018
50	SN		+ -			+ -		0.424	+ -	0.042
51	SB		+ -			+ -		0.391	+ -	0.053
56	BA		+ -			+ -		<	+ -	0.078
49	IN		+ -			+ -		0.033	+ -	0.016
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		0.064	+ -	NR
82	PB		+ -			+ -		11.664	+ -	1.166
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			83.987		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REMOVAL OF CARBON (PULVERIZED COAL) AND MOISTURE FROM ZINC OXIDE
CONTAINING APPROX. 10% LEAD AS PbSO4. REF 43.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
20501	43	ZINC	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	DUCT EMISSIONS FOR ZINC OXIDE KILN.
20501		OXIDE	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	MOISTURE AND CARBON (PULVERIZED COAL)
20501		KILN	THE STATE OF MONTANA. NEA, INC.(1982)	REMOVED FROM ZINC OXIDE PRODUCED FROM FUNING
20501				SLAG FROM A LEAD BLAST FURNACE. SAMPLE
20501				COLLECTED AT POINT OF DUCT DISCHARGE WITH A
20501				LOW-VOLUME SAMPLER.
20501				

SOURCE: ANTIMONY OXIDE PLANT-ANTIMONY ROASTING.
SCC: --
CONTROLS: WET SCRUBBER

PROFILE: 20502
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	0.000	+ -	0.148	0.000	+ -	0.281		+ -	
14	SI	0.000	+ -	0.148	0.000	+ -	0.281		+ -	
15	P	0.000	+ -	0.037	0.000	+ -	0.066		+ -	
16	S	1.334	+ -	0.068	1.493	+ -	0.146		+ -	
17	CL	0.754	+ -	0.042	0.786	+ -	0.084		+ -	
19	K	0.000	+ -	0.538	0.000	+ -	0.935		+ -	
20	CA	<	+ -	9.197	<	+ -	16.1		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.000	+ -	0.462	0.000	+ -	0.805		+ -	
23	V	0.000	+ -	0.004	0.000	+ -	0.007		+ -	
24	CR	0.005	+ -	0.001	0.080	+ -	0.004		+ -	
25	MN	0.006	+ -	0.001	0.008	+ -	0.004		+ -	
26	FE	0.108	+ -	0.006	0.125	+ -	0.016		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.015	+ -	0.001	0.010	+ -	0.004		+ -	
29	CU	0.011	+ -	0.001	0.005	+ -	0.004		+ -	
30	ZN	0.070	+ -	0.001	0.012	+ -	0.003		+ -	
31	GA	0.005	+ -	0.001	0.004	+ -	0.003		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.078	+ -	0.005	0.090	+ -	0.013		+ -	
34	SE	0.008	+ -	0.001	0.008	+ -	0.003		+ -	
35	BR	0.000	+ -	0.008	0.000	+ -	0.017		+ -	
37	RB	0.000	+ -	0.001	0.000	+ -	0.005		+ -	
38	SR	0.000	+ -	0.001	0.000	+ -	0.007		+ -	
40	ZR	0.000	+ -	0.007	0.000	+ -	0.029		+ -	
47	AG	0.000	+ -	0.007	0.000	+ -	0.029		+ -	
48	CD	0.000	+ -	0.011	0.000	+ -	0.039		+ -	
50	SN	0.000	+ -	0.027	0.000	+ -	0.355		+ -	
51	SB	76.651	+ -	3.630	87.726	+ -	7.138		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.000	+ -	0.039	0.000	+ -	0.212		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	0.000	+ -	0.002	0.028	+ -	0.007		+ -	
82	PB	0.128	+ -	0.007	0.103	+ -	0.018		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		79.173			90.478			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 52.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
20502	52	ANTIMONY	J.E. HOWES,J.A.COOPER AND J.E.	ANTIMONY ROASTING STACK SAMPLES DOWNSTREAM
20502		OXIDE	HOUCK,"SAMPLING AND ANALYSIS TO DETERMINE	FROM A WATER SCRUBBER SYSTEM. SAMPLES
20502		PLANT	SOURCE SIGNATURES IN THE PHILADELPHIA AREA,"	COLLECTED WITH A DILUTION SAMPLER. SINGLE
20502			DRAFT FINAL REPORT TO US EPA ENVIRON.	REPRESENTATIVE SAMPLE FROM A GROUP OF 9. XRF
20502			SCIENCE RES. LAB. RTP, N.C. BY NEA,	ANALYSIS WITH ANALYTICAL UNCERTAINITES.
20502			INC.(1983)	
20502				

SOURCE: LIMESTONE DUST
SCC: 3-03-010-05
CONTROLS: NONE

PROFILE: 21101
RANKING: 3321
RATING : B

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	2.110	+ -	0.211	1.199	+ -	0.120	1.067	+ -	0.107
14	SI	6.496	+ -	0.650	3.394	+ -	0.339	2.813	+ -	0.281
15	P	0.126	+ -	0.040	<	+ -	0.029	<	+ -	0.029
16	S	1.023	+ -	0.104	0.663	+ -	0.066	0.743	+ -	0.074
17	CL	0.455	+ -	0.048	0.410	+ -	0.041	0.420	+ -	0.042
19	K	0.163	+ -	0.042	0.135	+ -	0.023	0.091	+ -	0.022
20	CA	29.515	+ -	2.951	29.723	+ -	2.972	28.643	+ -	2.864
22	TI	0.081	+ -	NR	0.053	+ -	NR	0.046	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	0.050	+ -	NR	0.028	+ -	NR	0.025	+ -	NR
26	FE	1.043	+ -	0.104	0.536	+ -	0.054	0.441	+ -	0.044
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	0.016	+ -	NR	<	+ -	NR	<	+ -	NR
30	ZN	0.104	+ -	0.010	0.020	+ -	NR	0.014	+ -	NR
33	AS	0.020	+ -	0.013	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.027	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.024	+ -	NR	0.018	+ -	NR	0.022	+ -	NR
46	PD	<	+ -	0.021	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	0.027	<	+ -	NR	<	+ -	NR
48	CD	0.042	+ -	0.045	<	+ -	NR	<	+ -	NR
49	IN	<	+ -	0.047	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	0.052	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	0.095	<	+ -	0.017	<	+ -	NR
56	BA	<	+ -	0.256	<	+ -	0.044	<	+ -	0.022
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.270	+ -	0.027	0.048	+ -	NR	0.051	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		41.565			36.227			34.376		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : GROUND LIMESTONE FLUX MATERIAL - FUGITIVE DUST. QUARRIED NEAR MONTANA CITY, MONTANA. REF. 43.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21101	43	LIMESTONE	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	GROUND LIMESTONE MANUFACTURED FOR USE AS
21101			APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	FLUX. SAMPLES SIEVED AND RESUSPENDED.
21101			THE STATE OF MONTANA. NEA, INC.(1982)	
21101				

SOURCE: PRIMARY LEAD SMELTING - ORE CONCENTRATE
SCC: 3-03-010-05
CONTROLS: NONE

PROFILE: 21102
RANKING: 3321
RATING : B

			FINE			COARSE			TSP	
SPECIES NUMBER	SPECIES NAME	********* % BY WT	<2.5 UM + -	****** UNC	********* % BY WT	2.5-10UM +-	****** UNC	********* % BY WT	<30 UM +-	****** UNC
4	K	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	1.300	+ -	0.200	0.500	+ -	0.100	0.500	+ -	0.100
14	SI	3.800	+ -	0.400	1.800	+ -	0.200	1.500	+ -	0.500
15	P	0.500	+ -	0.100	0.200	+ -	0.050	0.306	+ -	0.031
16	S	8.000	+ -	1.000	4.000	+ -	1.000	4.000	+ -	1.000
17	CL	1.000	+ -	0.100	0.160	+ -	0.040	0.160	+ -	0.040
19	K	0.880	+ -	0.100	0.250	+ -	0.030	0.373	+ -	0.037
20	CA	2.200	+ -	0.220	2.100	+ -	0.210	3.290	+ -	0.329
22	TI	0.100	+ -	0.030	0.100	+ -	0.300	0.101	+ -	0.011
23	V	<	+ -	NR	NR	+ -	NR	0.020	+ -	NR
24	CR	0.092	+ -	NR	0.107	+ -	0.011	0.179	+ -	0.018
25	MN	0.200	+ -	0.030	0.280	+ -	0.040	0.460	+ -	0.046
26	FE	3.700	+ -	0.400	5.300	+ -	0.530	9.150	+ -	0.915
28	NI	0.040	+ -	NR	0.050	+ -	NR	0.091	+ -	NR
29	CU	1.200	+ -	0.200	1.600	+ -	0.200	2.575	+ -	0.257
30	ZN	3.492	+ -	0.349	3.817	+ -	0.382	6.659	+ -	0.666
33	AS	1.340	+ -	0.134	0.737	+ -	0.074	1.097	+ -	0.110
34	SE	0.024	+ -	NR	0.021	+ -	NR	0.050	+ -	NR
35	BR	0.200	+ -	0.050	0.040	+ -	NR	0.040	+ -	0.020
38	SR	0.056	+ -	NR	0.101	+ -	0.010	0.176	+ -	0.018
46	PD	0.044	+ -	0.021	0.085	+ -	NR	0.095	+ -	NR
47	AG	0.140	+ -	0.039	0.159	+ -	0.016	0.239	+ -	0.024
48	CD	0.788	+ -	0.090	0.536	+ -	0.054	0.834	+ -	0.083
49	IN	0.013	+ -	NR	0.011	+ -	NR	NR	+ -	NR
50	SN	0.101	+ -	0.064	0.160	+ -	0.016	0.224	+ -	0.022
51	SB	0.299	+ -	0.132	0.717	+ -	0.072	0.979	+ -	0.098
56	BA	0.172	+ -	0.297	0.083	+ -	0.021	0.185	+ -	0.036
80	HG	0.042	+ -	0.014	0.033	+ -	NR	0.047	+ -	NR
82	PB	10.377	+ -	1.034	13.786	+ -	1.379	22.871	+ -	2.287
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		40.100			36.733			56.201		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : ORE CONCENTRATE BLENDING - FUGITIVE EMISSIONS. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21102	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	FUGITIVE DUST EMISSION FROM A LEAD ORE
21102		SMELTER	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	CONCENTRATE (AND OTHER LEAD CONTAINING
21102			THE STATE OF MONTANA. NEA, INC.(1982)	MATERIALS) PROPORTIONING AND BLENDING
21102				OPERATION. SAMPLES COLLECTED WITH
21102				DICHOTOMOUS AND LOW-VOLUME SAMPLERS.
21102				

SOURCE: PRIMARY LEAD SMELTING-ORE CONCENTRATE COMPOSITE
SCC: 3-03-010-05
CONTROLS: NONE

PROFILE: 21103
RANKING: 3321
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	4.374	+ -	2.914	2.280	+ -	2.064	2.238	+ -	2.073
14	SI	9.709	+ -	6.315	5.627	+ -	4.352	5.581	+ -	4.510
15	P	0.808	+ -	0.159	0.539	+ -	0.109	0.495	+ -	0.121
16	S	17.067	+ -	4.343	12.353	+ -	2.980	10.715	+ -	4.069
17	CL	0.016	+ -	0.049	0.000	+ -	0.000	0.029	+ -	0.183
19	K	0.895	+ -	0.489	0.486	+ -	0.533	0.441	+ -	0.504
20	CA	2.025	+ -	1.218	1.888	+ -	1.099	1.479	+ -	1.239
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.219	+ -	0.104	0.172	+ -	0.093	0.167	+ -	0.109
23	V	0.027	+ -	0.013	0.014	+ -	0.011	0.019	+ -	0.000
24	CR	0.039	+ -	0.016	0.031	+ -	0.017	0.035	+ -	0.017
25	MN	0.296	+ -	0.482	0.206	+ -	0.305	0.211	+ -	0.324
26	FE	6.708	+ -	5.077	6.448	+ -	5.536	7.044	+ -	6.466
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.092	+ -	0.047	0.102	+ -	0.066	0.125	+ -	0.079
29	CU	6.588	+ -	5.355	7.088	+ -	5.705	7.312	+ -	6.216
30	ZN	3.561	+ -	2.921	4.300	+ -	3.241	4.647	+ -	3.911
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	3.935	+ -	2.847	3.679	+ -	2.745	3.074	+ -	3.755
34	SE	0.030	+ -	0.023	0.033	+ -	0.021	0.022	+ -	0.013
35	BR	0.353	+ -	0.237	0.335	+ -	0.219	0.315	+ -	0.299
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.056	+ -	0.105	0.063	+ -	0.154	0.059	+ -	0.158
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.600	+ -	0.571	0.596	+ -	0.370	0.610	+ -	0.648
48	CD	0.213	+ -	0.183	0.393	+ -	0.017	0.382	+ -	0.190
50	SN	0.292	+ -	0.252	0.385	+ -	0.214	0.313	+ -	0.245
51	SB	4.593	+ -	4.246	4.178	+ -	4.316	4.723	+ -	5.568
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.266	+ -	0.449	0.077	+ -	0.070	0.113	+ -	0.071
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	0.026	+ -	0.020	0.026	+ -	0.023	0.034	+ -	0.039
82	PB	24.865	+ -	15.0	25.959	+ -	16.8	28.996	+ -	16.7
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		87.653			77.258			79.179		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : 0.000 INDICATES < 0.001%. COMPOSITION OF VARIOUS ORE CONCENTRATES AND LEAD CONTAINING RESIDUES. FUGITIVE DUST. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21103	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	FUGITIVE DUST FROM THE STORAGE AND HANDLING
21103		SMELTER	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	OF LEAD ORE CONCENTRATES AND OTHER LEAD
21103			THE STATE OF MONTANA. NEA, INC.(1982)	CONTAINING MATERIALS. THE LEAD SMELTER IS A
21103				"CUSTOM SMELTER", HENCE THE CONCENTRATES AND
21103				OTHER MATERIALS ORIGINATE FROM SOURCES
21103				WORLDWIDE. THIS PROFILE IS AVERAGE OF
21103				FOURTEEN ORE AND OTHER LEAD CONTAINING
21103				MATERIALS. BULK SAMPLES WERE SIEVED AND
21103				RESUSPENDED.
21103				
21103				

SOURCE: COKE DUST
SCC: 3-03-010-05
CONTROLS: NONE

PROFILE: 21203
RANKING: 3321
RATING : C

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	4.039	+ -	0.519	2.568	+ -	0.257	3.007	+ -	0.301
14	SI	8.131	+ -	1.005	6.250	+ -	0.625	7.663	+ -	0.766
15	P	0.137	+ -	0.041	0.118	+ -	0.012	0.144	+ -	0.014
16	S	0.381	+ -	0.132	0.568	+ -	0.057	0.596	+ -	0.060
17	CL	0.164	+ -	0.055	0.032	+ -	0.000	0.047	+ -	0.000
19	K	0.217	+ -	0.038	0.167	+ -	0.017	0.187	+ -	0.019
20	CA	2.738	+ -	0.342	2.285	+ -	0.228	2.229	+ -	0.223
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.236	+ -	0.034	0.157	+ -	0.016	0.181	+ -	0.018
23	V	0.022	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
24	CR	0.016	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
25	MN	0.000	+ -	0.000	0.010	+ -	0.000	0.013	+ -	0.000
26	FE	1.464	+ -	0.189	0.907	+ -	0.091	1.037	+ -	0.104
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.000	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
29	CU	0.516	+ -	0.068	0.731	+ -	0.073	1.083	+ -	0.108
30	ZN	0.399	+ -	0.054	0.313	+ -	0.031	0.459	+ -	0.046
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	0.041	+ -	0.026	0.021	+ -	0.000	0.023	+ -	0.000
34	SE	0.000	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
35	BR	0.014	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.012	+ -	0.014	0.000	+ -	0.000	0.000	+ -	0.000
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.000	+ -	0.062	0.000	+ -	0.000	0.000	+ -	0.000
48	CD	0.050	+ -	0.089	0.013	+ -	0.000	0.012	+ -	0.000
50	SN	0.000	+ -	0.119	0.000	+ -	0.012	0.000	+ -	0.000
51	SB	0.225	+ -	0.203	0.069	+ -	0.023	0.000	+ -	0.018
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.560	+ -	0.610	0.000	+ -	0.061	0.066	+ -	0.048
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	0.017	+ -	0.016	0.000	+ -	0.000	0.000	+ -	0.000
82	PB	0.249	+ -	0.049	0.131	+ -	0.013	0.201	+ -	0.020
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		19.628			14.340			16.948		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : 0.000 INDICATES < 0.001. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21203	43	COKE DUST	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	FUGITIVE DUST FROM COKE STORAGE AND
21203			APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	HANDLING. BULK SAMPLE GROUND, SIEVED AND
21203			THE STATE OF MONTANA. NEA, INC.(1982)	RESUSPENDED.
21203				
21203				

SOURCE: COAL DUST
SCC: 3-03-010-05
CONTROLS: NONE

PROFILE: 21204
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	10.865	+ -	1.086	4.627	+ -	0.463	5.273	+ -	0.527
14	SI	22.466	+ -	2.247	11.346	+ -	1.135	12.956	+ -	1.296
15	P	0.194	+ -	0.019	0.085	+ -	NR	0.097	+ -	NR
16	S	0.566	+ -	0.057	0.417	+ -	0.042	0.533	+ -	0.053
17	CL	0.171	+ -	0.020	0.067	+ -	NR	0.086	+ -	NR
19	K	0.968	+ -	0.097	0.489	+ -	0.049	0.519	+ -	0.052
20	CA	3.142	+ -	0.314	3.422	+ -	0.342	4.465	+ -	0.446
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.283	+ -	0.028	0.161	+ -	0.016	0.172	+ -	0.017
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.015	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	0.013	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	1.422	+ -	0.142	<	+ -	0.094	1.109	+ -	0.111
27	CO	<	+ -	NR	0.945	+ -	NR	<	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	0.022	+ -	NR	<	+ -	NR	0.049	+ -	NR
30	ZN	0.033	+ -	NR	<	+ -	NR	0.041	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.015	+ -	NR	0.015	+ -	NR	0.016	+ -	NR
40	PD	<	+ -	0.011	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	0.014	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	0.021	0.017	+ -	NR	0.012	+ -	NR
50	SN	0.027	+ -	0.028	<	+ -	0.013	<	+ -	0.012
51	SB	<	+ -	0.054	0.018	+ -	0.021	<	+ -	0.022
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.077	+ -	0.138	<	+ -	0.061	0.108	+ -	0.056
58	IN	0.031	+ -	0.024	<	+ -	0.011	<	+ -	0.011
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.072	+ -	NR	0.018	+ -	NR	0.044	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		40.382			21.627			25.480		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : FUGITIVE DUST. REF. 43.

SOK

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21204	43	COAL DUST	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	FUGITIVE DUST FROM COAL STORAGE AND
21204			APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	HANDLING. SAMPLE SIEVED AND RESUSPENDED.
21204			THE STATE OF MONTANA. NEA, INC.(1982)	
21204				
21204				

SOURCE: PRIMARY LEAD SMELTING-SPEISS FUGITIVE DUST
SCC: 3-03-010-09
CONTROLS: NONE

PROFILE: 21205
RANKING: 3321
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.735	+ -	0.073	0.735	+ -	0.073	0.735	+ -	0.073
14	SI	2.613	+ -	0.261	2.613	+ -	0.261	2.613	+ -	0.261
15	P	0.233	+ -	0.023	0.233	+ -	0.023	0.233	+ -	0.023
16	S	3.716	+ -	0.734	3.716	+ -	0.734	3.716	+ -	0.734
17	CL	0.000	+ -	0.048	0.000	+ -	0.048	0.000	+ -	0.048
19	K	0.074	+ -	0.000	0.074	+ -	0.000	0.074	+ -	0.000
20	CA	1.289	+ -	0.129	1.289	+ -	0.129	1.289	+ -	0.129
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.077	+ -	0.000	0.077	+ -	0.000	0.077	+ -	0.000
23	V	0.011	+ -	0.000	0.011	+ -	0.000	0.011	+ -	0.000
24	CR	0.022	+ -	0.000	0.022	+ -	0.000	0.022	+ -	0.000
25	MN	0.036	+ -	0.000	0.036	+ -	0.000	0.036	+ -	0.000
26	FE	2.366	+ -	0.237	2.366	+ -	0.237	2.366	+ -	0.237
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.755	+ -	0.075	0.755	+ -	0.075	0.755	+ -	0.075
29	CU	37.919	+ -	3.792	37.919	+ -	3.792	37.919	+ -	3.792
30	ZN	1.109	+ -	0.111	1.109	+ -	0.111	1.109	+ -	0.111
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	6.460	+ -	0.646	6.460	+ -	0.646	6.460	+ -	0.646
34	SE	0.040	+ -	0.000	0.040	+ -	0.000	0.040	+ -	0.000
35	BR	0.596	+ -	0.060	0.596	+ -	0.060	0.596	+ -	0.060
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.011	+ -	0.000	0.011	+ -	0.000	0.011	+ -	0.000
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.526	+ -	0.053	0.526	+ -	0.053	0.526	+ -	0.053
48	CD	0.339	+ -	0.034	0.339	+ -	0.034	0.339	+ -	0.034
50	SN	0.649	+ -	0.065	0.649	+ -	0.065	0.649	+ -	0.065
51	SB	3.641	+ -	0.364	3.641	+ -	0.364	3.641	+ -	0.364
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.038	+ -	0.025	0.038	+ -	0.025	0.038	+ -	0.025
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	0.024	+ -	0.000	0.024	+ -	0.000	0.024	+ -	0.000
82	PB	17.880	+ -	1.788	17.880	+ -	1.788	17.880	+ -	1.788
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		81.159			81.159			81.159		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 43.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21205	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	SPEISS FUGITIVE DUSTS.
21205		SMELTING	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	
21205			THE STATE OF MONTANA. NEA, INC.(1982)	
21205				

SOURCE: PRIMARY LEAD SMELTING-SODA FLUX FUGITIVE DUST
SCC: 3-03-010-05
CONTROLS: NONE

PROFILE: 21206
RANKING: 3321
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.511	+ -	0.103	0.055	+ -	0.014	0.062	+ -	0.000
14	SI	1.105	+ -	0.139	0.201	+ -	0.020	0.174	+ -	0.017
15	P	0.079	+ -	0.030	0.013	+ -	0.000	0.000	+ -	0.000
16	S	1.792	+ -	0.261	0.298	+ -	0.047	0.215	+ -	0.036
17	CL	0.266	+ -	0.065	0.022	+ -	0.000	0.000	+ -	0.000
19	K	0.240	+ -	0.042	0.038	+ -	0.000	0.014	+ -	0.000
20	CA	0.414	+ -	0.053	0.161	+ -	0.016	0.139	+ -	0.014
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.019	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
23	V	0.013	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
24	CR	0.000	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
25	MN	0.021	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
26	FE	0.336	+ -	0.049	0.180	+ -	0.018	0.206	+ -	0.021
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.000	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
29	CU	0.137	+ -	0.020	0.080	+ -	0.000	0.082	+ -	0.000
30	ZN	0.717	+ -	0.082	0.233	+ -	0.023	0.229	+ -	0.023
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	0.169	+ -	0.049	0.090	+ -	0.011	0.063	+ -	0.000
34	SE	0.000	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
35	BR	0.093	+ -	0.015	0.011	+ -	0.000	0.000	+ -	0.000
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.000	+ -	0.012	0.000	+ -	0.000	0.000	+ -	0.000
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.000	+ -	0.055	0.000	+ -	0.000	0.000	+ -	0.000
48	CD	0.487	+ -	0.109	0.070	+ -	0.014	0.055	+ -	0.000
50	SN	0.017	+ -	0.105	0.011	+ -	0.014	0.014	+ -	0.000
51	SB	0.000	+ -	0.191	0.046	+ -	0.028	0.000	+ -	0.011
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.000	+ -	0.495	0.038	+ -	0.072	0.000	+ -	0.023
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	0.000	+ -	0.014	0.000	+ -	0.000	0.000	+ -	0.000
82	PB	2.172	+ -	0.243	0.841	+ -	0.084	0.813	+ -	0.081
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		8.588			2.388			2.066		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : 0.000 INDICATES < 0.001. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21206	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	SODA FLUX FUGITIVE DUST EMISSIONS
21206		SMELTING	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	
21206			THE STATE OF MONTANA. NEA, INC.(1982)	
21206				

SOURCE: COPPER ORE CRUSHING
SCC: 3-03-024-01
CONTROLS: NONE

PROFILE: 21301
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	18.798	+ -	1.880	13.899	+ -	1.390		+ -	
14	SI	42.046	+ -	4.205	31.945	+ -	3.194		+ -	
15	P	0.541	+ -	0.054	0.258	+ -	0.026		+ -	
16	S	1.600	+ -	0.172	1.149	+ -	0.115		+ -	
17	CL	0.122	+ -	0.035	0.102	+ -	0.010		+ -	
19	K	3.942	+ -	0.394	3.662	+ -	0.366		+ -	
20	CA	0.881	+ -	0.088	0.717	+ -	0.072		+ -	
22	TI	0.311	+ -	0.031	0.390	+ -	0.039		+ -	
23	V	0.046	+ -	NR	0.032	+ -	NR		+ -	
24	CR	0.030	+ -	NR	0.021	+ -	NR		+ -	
25	MN	0.087	+ -	NR	0.102	+ -	0.010		+ -	
26	FE	4.359	+ -	0.436	4.062	+ -	0.406		+ -	
28	NI	0.012	+ -	NR	<	+ -	NR		+ -	
29	CU	1.009	+ -	0.101	1.063	+ -	0.106		+ -	
30	ZN	0.212	+ -	0.022	0.233	+ -	0.023		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.018	+ -	0.016	0.033	+ -	NR		+ -	
34	SE	0.013	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	0.021	+ -	NR		+ -	
38	SR	0.041	+ -	NR	0.034	+ -	NR		+ -	
39	Y	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
42	MO	<	+ -	NR	0.097	+ -	NR		+ -	
46	PD	<	+ -	0.027	<	+ -	NR		+ -	
47	AG	0.023	+ -	0.039	<	+ -	NR		+ -	
48	CD	<	+ -	0.056	<	+ -	NR		+ -	
49	IN	0.025	+ -	0.059	<	+ -	NR		+ -	
50	SN	<	+ -	0.072	<	+ -	NR		+ -	
51	SB	<	+ -	0.127	0.012	+ -	0.019		+ -	
56	BA	0.656	+ -	0.353	0.036	+ -	0.048		+ -	
57	LA	<	+ -	NR	<	+ -	0.075			
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.214	+ -	0.029	0.105	+ -	0.010		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		74.986			57.973			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : FUGITIVE DUST. REF. 44.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21301	44	COPPER	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	COPPER ORE. FUGITIVE DUST FROM CRUSHING AND
21301		ORE	CHEMICAL MASS BALANCE,"STATE OF MONTANA	HANDLING. BULK SAMPLE SIEVED AND
21301			DEPT. HEALTH AND ENVIR. SCIENCES (1982)	RESUSPENDED.
21301				

SOURCE: COPPER ORE MILL WASTEPILE
SCC: 3-03-024-01
CONTROLS: NONE

PROFILE: 21302
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	21.269	+ -	2.127	14.655	+ -	1.465		+ -	
14	SI	40.602	+ -	4.060	30.240	+ -	3.024		+ -	
15	P	0.346	+ -	0.035	0.203	+ -	0.020		+ -	
16	S	1.349	+ -	0.135	1.272	+ -	0.127		+ -	
17	CL	0.111	+ -	0.025	0.102	+ -	0.010		+ -	
19	K	4.353	+ -	0.435	3.900	+ -	0.390		+ -	
20	CA	0.561	+ -	0.056	0.757	+ -	0.076		+ -	
22	TI	0.292	+ -	0.029	0.422	+ -	0.042		+ -	
23	V	0.025	+ -	NR	0.030	+ -	NR		+ -	
24	CR	0.028	+ -	NR	0.018	+ -	NR		+ -	
25	MN	0.108	+ -	0.011	0.112	+ -	0.011		+ -	
26	FE	3.075	+ -	0.307	3.270	+ -	0.327		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	1.234	+ -	0.123	1.238	+ -	0.124		+ -	
30	ZN	0.400	+ -	0.040	0.496	+ -	0.050		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.049	+ -	0.013	0.062	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	0.022	+ -	NR		+ -	
38	SR	0.026	+ -	NR	0.032	+ -	NR		+ -	
39	Y	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
42	MO	<	+ -	NR	0.038	+ -	NR		+ -	
46	PD	<	+ -	0.017	<	+ -	NR		+ -	
47	AG	<	+ -	0.025	<	+ -	NR		+ -	
48	CD	0.046	+ -	0.038	<	+ -	NR		+ -	
49	IN	<	+ -	0.038	0.014	+ -	NR		+ -	
50	SN	<	+ -	0.048	<	+ -	NR		+ -	
51	SB	0.053	+ -	0.088	<	+ -	0.014		+ -	
56	BA	0.106	+ -	0.222	0.066	+ -	0.038		+ -	
57	LA	<	+ -	NR	<	+ -	0.061		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.287	+ -	0.029	0.202	+ -	0.020		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	SO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		74.320			57.151			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COPPER ORE MILL AND MOLYBDENIUM PLANT WASTE PILE - FUGITIVE DUST. REF. 44.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21302	44	COPPER	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	COPPER ORE MILLING AND MOLYBDENIUM PLANT
21302		ORE	CHEMICAL MASS BALANCE,"STATE OF MONTANA	WASTE PILE. BULK SAMPLE SIEVED AND
21302			DEPT. HEALTH AND ENVIR. SCIENCES (1982)	RESUSPENDED.
21302				

SOURCE: COPPER ORE CONCENTRATE
SCC: 3-03-02-024-04
CONTROLS: NONE

PROFILE: 21303
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	7.923	+ -	0.792	2.648	+ -	0.265	NA	+ -	NR
14	SI	15.955	+ -	1.595	5.969	+ -	0.597	NA	+ -	NR
15	P	0.596	+ -	0.060	0.326	+ -	0.033	NA	+ -	NR
16	S	12.929	+ -	1.293	10.182	+ -	1.018	NA	+ -	NR
17	CL	0.020	+ -	0.042	<	+ -	0.032	NA	+ -	NR
19	K	1.745	+ -	0.174	0.887	+ -	0.089	NA	+ -	NR
20	CA	0.517	+ -	0.052	0.456	+ -	0.046	NA	+ -	NR
22	TI	0.239	+ -	0.024	0.219	+ -	0.022	NA	+ -	NR
23	V	0.039	+ -	NR	0.034	+ -	NR	NA	+ -	NR
24	CR	0.050	+ -	NR	0.042	+ -	NR	NA	+ -	NR
25	MN	0.087	+ -	NR	0.069	+ -	NR	NA	+ -	NR
26	FE	10.355	+ -	1.035	12.101	+ -	1.210	NA	+ -	NR
28	NI	0.103	+ -	0.010	0.109	+ -	0.011	NA	+ -	NR
29	CU	21.726	+ -	2.173	22.110	+ -	2.211	NA	+ -	NR
30	ZN	4.717	+ -	0.472	6.446	+ -	0.645	NA	+ -	NR
31	GA	NA	+ -	NR	0.051	+ -	NR	NA	+ -	NR
33	AS	1.016	+ -	0.102	0.991	+ -	0.099	NA	+ -	NR
34	SE	0.012	+ -	NR	<	+ -	NR	NA	+ -	NR
35	BR	0.081	+ -	NR	0.081	+ -	NR	NA	+ -	NR
37	RB	NA	+ -	NR	<	+ -	NR	NA	+ -	NR
38	SR	0.017	+ -	NR	0.017	+ -	NR	NA	+ -	NR
39	Y	NA	+ -	NR	<	+ -	NR	NA	+ -	NR
40	ZR	NA	+ -	NR	0.035	+ -	NR	NA	+ -	NR
42	MO	NA	+ -	NR	0.520	+ -	0.052	NA	+ -	NR
46	PD	<	+ -	NR	0.020	+ -	NR	NA	+ -	NR
47	AG	0.090	+ -	0.011	0.063	+ -	NR	NA	+ -	NR
48	CD	0.043	+ -	0.012	0.052	+ -	NR	NA	+ -	NR
49	IN	0.019	+ -	0.012	0.025	+ -	NR	NA	+ -	NR
50	SN	0.036	+ -	0.014	0.051	+ -	NR	NA	+ -	NR
51	SB	0.094	+ -	0.026	0.073	+ -	NR	NA	+ -	NR
56	BA	<	+ -	0.068	<	+ -	0.015	NA	+ -	NR
57	LA	NA	+ -	NR	<	+ -	0.023	NA	+ -	NR
80	HG	0.020	+ -	NR	0.022	+ -	NR	NA	+ -	NR
82	PB	1.082	+ -	0.108	1.023	+ -	0.102	NA	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		79.511			64.622			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : FUGITIVE DUST. REF. 44.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21303	44	COPPER	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	COPPER ORE CONCENTRATE - FUGITIVE DUST.
21303		ORE	CHEMICAL MASS BALANCE,"STATE OF MONTANA	BULK SAMPLE SIEVED AND RESUSPENDED.
21303			DEPT. HEALTH AND ENVIR. SCIENCES (1982)	
21303				

SOURCE: COPPER MINING WASTE
SCC: 3-03-024-04
CONTROLS: NONE

PROFILE: 21304
RANKING: 2311
RATING : D

			FINE			COARSE			TSP	
SPECIES NUMBER	SPECIES NAME	********* % BY WT	<2.5 UM + -	****** UNC	********* % BY WT	2.5-10UM +-	****** UNC	********* % BY WT	<30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	11.447	+ -	1.145	9.769	+ -	0.977	NA	+ -	NR
14	SI	25.023	+ -	2.502	24.576	+ -	2.458	NA	+ -	NR
15	P	0.556	+ -	0.056	0.310	+ -	0.031	NA	+ -	NR
16	S	4.944	+ -	0.494	2.691	+ -	0.269	NA	+ -	NR
17	CL	0.097	+ -	0.035	0.096	+ -	0.013	NA	+ -	NR
19	K	2.304	+ -	0.230	2.093	+ -	0.209	NA	+ -	NR
20	CA	1.087	+ -	0.109	1.937	+ -	0.194	NA	+ -	NR
22	TI	0.403	+ -	0.040	0.519	+ -	0.052	NA	+ -	NR
23	V	0.044	+ -	NR	0.035	+ -	NR	NA	+ -	NR
24	CR	0.052	+ -	NR	0.036	+ -	NR	NA	+ -	NR
25	MN	0.089	+ -	NR	0.108	+ -	0.011	NA	+ -	NR
26	FE	14.384	+ -	1.438	9.106	+ -	0.911	NA	+ -	NR
28	NI	0.014	+ -	NR	<	+ -	NR	NA	+ -	NR
29	CU	0.353	+ -	0.035	0.272	+ -	NR	NA	+ -	NR
30	ZN	0.650	+ -	0.065	0.696	+ -	0.027	NA	+ -	NR
31	GA	NA	+ -	NA	<	+ -	0.070	NA	+ -	NR
33	AS	0.051	+ -	0.025	0.043	+ -	NR	NA	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
35	BR	0.018	+ -	NR	<	+ -	NR	NA	+ -	NR
37	RB	NA	+ -	NR	0.014	+ -	NR	NA	+ -	NR
38	SR	<	+ -	NR	0.019	+ -	NR	NA	+ -	NR
39	Y	NA	+ -	NR	<	+ -	NR	NA	+ -	NR
40	ZR	NA	+ -	NR	0.016	+ -	NR	NA	+ -	NR
42	MO	NA	+ -	NR	0.014	+ -	NR	NA	+ -	NR
46	PD	<	+ -	0.021	<	+ -	NR	NA	+ -	NR
47	AG	0.016	+ -	0.030	<	+ -	NR	NA	+ -	NR
48	CD	0.031	+ -	0.044	<	+ -	NR	NA	+ -	NR
49	IN	<	+ -	0.047	<	+ -	NR	NA	+ -	NR
50	SN	<	+ -	0.050	<	+ -	NR	NA	+ -	NR
51	SB	0.169	+ -	0.095	0.046	+ -	0.017	NA	+ -	NR
56	BA	<	+ -	0.269	<	+ -	0.046	NA	+ -	NR
57	LA	NA	+ -	NR	<	+ -	0.069	NA	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
82	PB	1.197	+ -	0.120	0.633	+ -	0.063	NA	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		62.929			53.029			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COPPER MINING AND/OR CONCENTRATING WASTE MATERIAL. REF. 44.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21304	44	COPPER	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	COPPER MINING AND/OR CONCENTRATING WASTE
21304		MINING	CHEMICAL MASS BALANCE,"STATE OF MONTANA	PILE. BULK SAMPLE SIEVED AND RESUSPENDED.
21304			DEPT. HEALTH AND ENVIR. SCIENCES (1982)	
21304				
21304				

SOURCE: FEED AND GRAIN HANDLING DUST.
SCC: 3-02-005-01
CONTROLS: UNKNOWN

PROFILE: 21401
RANKING: UNKNOWN
RATING : D

SPECIE NUMBER	SPECIE NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	15.000	+ -	NR	15.000	+ -	NR	15.000	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	<	+ -	NR	<	+ -	NR	<	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
20	CA	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	<	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
200	TC	30.000	+ -	NR	30.000	+ -	NR	30.000	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		46.750			46.750			46.750		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON NR: NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : SOURCE TEST, ANALYTICAL METHODS AND REPRESENTATIVENESS
REF: 10 OF THE DATA UNKNOWN BUT LIKELY OF POOR QUALITY.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21401	10	GRAIN	H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.	ORIGINAL REFERENCE: M. SITIG, "PARTICULATES
21401		PROCESS	BRUNETZ," FINE PARTICLE EMISSIONS FROM	AND FINE DUST REMOVAL," HOYES DATA CORP.
21401			STATIONARY AND MISCELLANEOUS SOURCES IN THE	(1977) P. 175 (NOT REVIEWED). USE WITH
21401			SOUTH COAST AIR BASIN,"KVB CORP. NO	CAUTION. DATA FROM TABACK APPENDIX A, PROFILE
21401			5806-783(1979). NTIS #PB 293923.	NO. 29.
21401				
21401			ALL PROFILES FROM THIS REFERENCE WERE	NOTE: ORIGIONAL DATA REPORTED AS
21401			OBTAINED USING THE EPA SOURCE ASSESSMENT	TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS
21401			SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A	(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND
21401			HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1	0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS
21401			UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND	DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE
21401			IMPINGERS OPERATED ISOKINETICALLY. CYCLONE	ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES
21401			AND FILTER CATCHES WERE ANALYZED BY XRF	>10,3-10,1-3,<1 UM. TSP PROFILE IS KVB
21401			(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE	COMPOSITE PROFILE.
21401			OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT	
21401			BE CONSIDERED QUANTITATIVE. AA WAS	
21401			OCASSIONALLY USED AS A QA MEASURE. WATER	
21401			SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE	
21401			METHOD) AND CARBON (OXIDATION/NDIR	
21401			DETECTION); CARBONATE AND "VOLATILE" CARBON	
21401			OXIDIZED AT 150 DEG.C WERE	
21401			ROUTINE.UNFORTUANTELY, SEVERAL OF THE	
21401			LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN	
21401			REPORTED AS A SUM. THIS DOCUMENT IS	
21401			REPRESENTS A RICH SOURCE OF INFORMATION.	
21401				

SOURCE: PRIMARY LEAD SMELTING-SLAG DUST
SCC: 3-03-999-99
CONTROLS: NONE

PROFILE: 21501
RANKING: 3321
RATING : C

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	3.744	+ -	0.374	2.150	+ -	0.215	2.349	+ -	0.235
14	SI	18.202	+ -	1.820	11.323	+ -	1.132	12.509	+ -	1.251
15	P	0.352	+ -	0.035	0.202	+ -	0.020	0.183	+ -	0.018
16	S	4.260	+ -	0.426	2.237	+ -	0.224	1.967	+ -	0.197
17	CL	0.229	+ -	0.052	0.119	+ -	0.025	0.112	+ -	0.017
19	K	0.777	+ -	0.078	0.570	+ -	0.057	0.648	+ -	0.065
20	CA	9.313	+ -	0.931	7.499	+ -	0.750	9.245	+ -	0.924
22	TI	0.372	+ -	0.037	0.290	+ -	0.029	0.257	+ -	0.026
23	V	0.092	+ -	NR	0.051	+ -	NR	0.044	+ -	NR
24	CR	0.096	+ -	NR	0.086	+ -	NR	0.112	+ -	0.011
25	MN	1.168	+ -	0.117	0.988	+ -	0.099	1.278	+ -	0.128
26	FE	16.292	+ -	1.629	15.294	+ -	1.529	21.323	+ -	2.132
28	NI	0.054	+ -	NR	0.046	+ -	NR	0.048	+ -	NR
29	CU	1.766	+ -	0.177	1.044	+ -	0.104	1.189	+ -	0.119
30	ZN	11.305	+ -	1.130	7.296	+ -	0.730	9.203	+ -	0.920
33	AS	0.634	+ -	0.068	0.357	+ -	0.036	0.325	+ -	0.032
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.065	+ -	NR	0.031	+ -	NR	0.034	+ -	NR
38	SR	0.182	+ -	0.018	0.150	+ -	0.015	0.195	+ -	0.019
46	PD	<	+ -	0.020	<	+ -	NR	0.018	+ -	NR
47	AG	0.033	+ -	0.028	<	+ -	0.012	0.018	+ -	NR
48	CD	0.050	+ -	0.043	0.037	+ -	0.020	0.055	+ -	NR
49	IN	0.053	+ -	0.047	<	+ -	0.018	<	+ -	NR
50	SN	<	+ -	0.055	0.094	+ -	0.023	0.062	+ -	NR
51	SB	0.244	+ -	0.108	0.069	+ -	0.042	0.202	+ -	0.021
56	BA	0.084	+ -	0.269	0.194	+ -	0.109	0.353	+ -	0.042
80	HG	0.023	+ -	0.011	0.014	+ -	NR	0.014	+ -	NR
82	PB	6.114	+ -	0.611	3.159	+ -	0.316	3.500	+ -	0.350
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		75.504			53.300			65.243		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : LEAD SLAG OTHER DE-ZINING. FUGITIVE DUST. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
21501	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	FUGITIVE DUST FROM LEAD SMELTING SLAG PILE.
21501		SMELTING-	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	BULK SAMPLE IS COMPOSITE OF NUMEROUS SAMPLES
21501		SLAG	THE STATE OF MONTANA. NEA, INC.(1982)	COLLECTED AT VARIOUS LOCATIONS ON THE PILE.
21501				BULK SAMPLE SIEVED AND RESUSPENDED.
21501				

SOURCE: PARTICLE BOARD DRYER
SCC: 3-07-007-03
CONTROLS: MULTICLONES

PROFILE: 22101
RANKING: 2324
RATING : B

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	3.700	+ -	4.000	0.300	+ -	0.100		+ -	
12	MG	NA	+ -	NR	0.040	+ -	0.020		+ -	
13	AL	<	+ -	NR	<	+ -	NR		+ -	
14	SI	0.250	+ -	0.070	<	+ -	0.100		+ -	
15	P	NA	+ -	NR	NA	+ -	NR		+ -	
16	S	1.400	+ -	0.200	0.030	+ -	0.003		+ -	
17	CL	4.500	+ -	0.800	<	+ -	NR		+ -	
19	K	4.000	+ -	0.800	<	+ -	NR		+ -	
20	CA	0.500	+ -	0.100	0.100	+ -	0.030		+ -	
21	SC	NA	+ -	NR	NA	+ -	NR		+ -	
22	TI	<	+ -	NR	<	+ -	NR		+ -	
23	V	<	+ -	NR	<	+ -	NR		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	0.090	+ -	0.010	NA	+ -	NR		+ -	
26	FE	0.100	+ -	0.010	NA	+ -	NR		+ -	
27	CO	NA	+ -	NR	NA	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	<	+ -	NR	<	+ -	NR		+ -	
30	ZN	0.060	+ -	0.010	NA	+ -	NR		+ -	
31	GA	NA	+ -	NR	NA	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	NA	+ -	NR	NA	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	NA	+ -	NR	NA	+ -	NR		+ -	
47	AG	NA	+ -	NR	NA	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	NA	+ -	NR	NA	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	NA	+ -	NR	NA	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	<	+ -	NR	<	+ -	NR		+ -	
200	TC	NA	+-	NR	58.000	+-	******			
201	OC	50.000	+ -	******	NA	+ -	NR		+ -	
202	EC	8.000	+ -	5.000	NA	+ -	NR		+ -	
203	SO4	3.650	+ -	0.600	0.100	+ -	0.100		+ -	
204	NO3	1.250	+ -	0.350	0.500	+ -	0.200		+ -	
SUM(%)		76.100			59.040			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 45.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
22101	45	PARTICLE	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	AVERAGE OF TWO SAMPLES COLLECTED FROM ONE
22101		BOARD	CHARACTERIZATION STUDY," REPORT TO THE	SOURCE. GLUES USED IN PRODUCTION <1% NACL.
22101		DRIER	OREGON DEPT. ENVIRON. QUALITY. OREGON	MULTICLONE CONTROLS. WHITE CITY, OREGON..
22101			GRADUATE CENTER (1980)	
22101				

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13-Jun-85                                     SOURCE LIBRARY


           SOURCE:   PARTICLE BOARD DRYER                                               PROFILE:     22102
           SCC:       3-07-007-03                                                       RANKING:      2324
           CONTROLS: MULTICLONES                                                        RATING :         B
--------------------------------------------------------------------------------------------------------------
                                    FINE                                COARSE                             TSP
SPECIES    SPECIES  *********  <2.5 UM  ******     *********  2.5-10UM ******     *********  <30 UM  ******
 NUMBER     NAME    % BY WT    + -      UNC        % BY WT    +-       UNC        % BY WT    +-      UNC
-------     -----   ---------  -------  -----      ---------  -------- ------     ---------  -----   ------
      4      BE        NA       + -      NR            NA      + -      NR                   + -
      5      B         NA       + -      NR            NA      + -      NR                   + -
      9      F         NA       + -      NR            NA      + -      NR                   + -
     11      NA      18.200     + -     3.100        17.000    + -     4.000                 + -
     12      MG        <        + -      NR           0.400    + -     0.600                 + -
     13      AL        <        + -      NR            NA      + -      NR                   + -
     14      SI       0.250     + -     0.070         1.100    + -     0.100                 + -
     15      P         <        + -      NR            NA      + -      NR                   + -
     16      S        1.000     + -     0.400         1.900    + -     0.500                 + -
     17      CL      23.400     + -     1.900        25.000    + -     6.000                 + -
     19      K        1.050     + -     0.070         1.500    + -     0.300                 + -
     20      CA       0.200     + -      NR           1.100    + -     0.400                 + -
     21      SC        <        + -      NR            <       + -      NR                   + -
     22      TI        <        + -      NR            <       + -      NR                   + -
     23      V         <        + -      NR            <       + -      NR                   + -
     24      CR        <        + -      NR            <       + -      NR                   + -
     25      MN       0.020     + -      NR            <       + -      NR                   + -
     26      FE       0.020     + -     0.030          <       + -      NR                   + -
     27      CO        <        + -      NR            <       + -      NR                   + -
     28      NI        <        + -      NR            <       + -      NR                   + -
     29      CU        <        + -      NR            <       + -      NR                   + -
     30      ZN       0.020     + -      NR            <       + -      NR                   + -
     31      GA        <        + -      NR            <       + -      NR                   + -
     32      GE        <        + -      NR            <       + -      NR                   + -
     33      AS        <        + -      NR            <       + -      NR                   + -
     34      SE        <        + -      NR            <       + -      NR                   + -
     35      BR        <        + -      NR            <       + -      NR                   + -
     37      RB        <        + -      NR            <       + -      NR                   + -
     38      SR        <        + -      NR            <       + -      NR                   + -
     40      ZR        <        + -      NR            <       + -      NR                   + -
     47      AG        <        + -      NR            <       + -      NR                   + -
     48      CD        <        + -      NR            <       + -      NR                   + -
     50      SN        <        + -      NR            <       + -      NR                   + -
     51      SB        <        + -      NR            <       + -      NR                   + -
     55      CS        <        + -      NR            <       + -      NR                   + -
     56      BA        <        + -      NR            <       + -      NR                   + -
     58      CE        <        + -      NR            <       + -      NR                   + -
     80      HG        <        + -      NR            <       + -      NR                   + -
     82      PB        <        + -      NR            <       + -      NR                   + -
    201      OC      10.000     + -     5.000        10.000    + -     5.000                 + -
    202      EC       1.200     + -     0.300         1.200    + -     0.300                 + -
    203      SO4      3.650     + -     0.070         2.200    + -     0.500                 + -
    204      NO3      1.250     + -     0.350         0.500    + -     0.200                 + -
SUM( % )             60.260                      61.900                           0.000

NOTES:     OC = ORGANIC CARBON :  EC = ELEMENTAL CARBON :  NA = NOT ANALYZED :  NR = NOT REPORTED
           < = LESS THAN DETECTION LIMIT
           OTHER NOTES : REF. 45.
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PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
22102	45	PARTICLE	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	AVERAGE OF TWO SAMPLES COLLECTED WITH A
22102		BOARD	CHARACTERIZATION STUDY," REPORT TO THE	TWO-STAGE VIRTUAL IMAPACTOR FROM ONE SOURCE.
22102		DRIER	OREGON DEPT. ENVIRON. QUALITY. OREGON	HIGH NA,CL CONTENT DUE TO USE OF HIGH SALT-
22102			GRADUATE CENTER (1980)	CONTENT RESIN GLUES USED IN PARTICLEBOARD
22102				PRODUCTION. WET SCRUBBER. MEDFORD, OREGON.
22102				

SOURCE: WOOD PRODUCTS-SANDERDUST
SCC: 3-07-007-02
CONTROLS: CYCLONE

PROFILE: 22201
RANKING: 2121
RATING : C

SPECIE NUMBER	SPECIE NAME	********* % BY WT	FINE <2.5 UM +-	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	<	+ -	NR	<	+ -	NR	<	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	<	+ -	NR	<	+ -	NR	<	+ -	NR
20	CA	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
26	FE	<	+ -	NR	<	+ -	NR	<	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	<	+ -	NR	<	+ -	NR	<	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	<	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
201	OC	35.000	+ -	NR	35.000	+ -	NR	35.000	+ -	NR
202	EC	6.000	+ -	NR	6.000	+ -	NR	6.000	+ -	NR
203	SO4	<	+ -	NR	<	+ -	NR	<	+ -	NR
204	NO3	<	+ -	NR	<	+ -	NR	<	+ -	NR
SUM(%)		41.150			41.150			41.150		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON NR: NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : SANDERDUST IS A NEARLY PURE CARBON SOURCE WITH NO DISTINGUISHING TRACE ELEMENT MARKERS. EC ESTIMATED FROM TOTAL AND VOLATILE CARBON.
REF: 10

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PROFILE|REFERENCE|SOURCE  |                     REFERENCE                   |REFERENCE ABSTRACT                              |
NUMBER |NUMBER   |GROUP   |                                                 |                                                |
---------------------------------------------------------------------------------------------------------------------------------|
 22201 |       10 |SANDER  |H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.     |AVERAGE OF 5 SOURCE TESTS FROM CYCLONE          |
 22201 |          |DUST    |BRUNETZ," FINE PARTICLE EMISSIONS FROM          |OUTLET OF WOOD SANDING OPERATION AND            |
 22201 |          |        |STATIONARY AND MISCELLANEOUS SOURCES IN THE     |RESAWING.  PURE CARBON SOURCE.  WOOD, OR        |
 22201 |          |        |SOUTH COAST AIR BASIN,"KVB CORP. NO             |CELLULOSE (C605H10)IS 44%C, 49%O AND 6%H.       |
 22201 |          |        |5806-783(1979).  NTIS #PB 293923.               |                                                |
 22201 |          |        |                                                |NOTE: ORIGIONAL DATA REPORTED AS                |
 22201 |          |        |ALL PROFILES FROM THIS REFERENCE WERE           |TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS    |
 22201 |          |        |OBTAINED USING THE EPA SOURCE ASSESSMENT        |(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND       |
 22201 |          |        |SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A    |0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS     |
 22201 |          |        |HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1    |DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE|
 22201 |          |        |UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND    |ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES     |
 22201 |          |        |IMPINGERS OPERATED ISOKINETICALLY. CYCLONE      | >10,3-10,1-3,<1 UM. TSP PROFILE IS KVB         |
 22201 |          |        |AND FILTER CATCHES WERE ANALYZED BY XRF         |COMPOSITE PROFILE.                              |
 22201 |          |        |(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE    |                                                |
 22201 |          |        |OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT    |                                                |
 22201 |          |        |BE CONSIDERED QUANTITATIVE.  AA WAS             |                                                |
 22201 |          |        |OCASSIONALLY USED AS A QA MEASURE. WATER        |                                                |
 22201 |          |        |SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE        |                                                |
 22201 |          |        |METHOD) AND CARBON (OXIDATION/NDIR              |                                                |
 22201 |          |        |DETECTION); CARBONATE AND "VOLATILE" CARBON     |                                                |
 22201 |          |        |OXIDIZED AT 150 DEG.C WERE                      |                                                |
 22201 |          |        |ROUTINE.UNFORTUANTELY, SEVERAL OF THE           |                                                |
 22201 |          |        |LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN        |                                                |
 22201 |          |        |REPORTED AS A SUM. THIS DOCUMENT IS             |                                                |
 22201 |          |        |REPRESENTS A RICH SOURCE OF INFORMATION.        |                                                |
 22201 |          |        |                                                |                                                |
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SOURCE LIBRARY

SOURCE: SAWDUST
SCC: NONE
CONTROLS: NONE

PROFILE: 22202
RANKING: 1324
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	0.240	+ -	0.100	0.240	+ -	0.100		+ -	
12	MG	<	+ -	NR	<	+ -	NR		+ -	
13	AL	0.180	+ -	0.130	0.090	+ -	0.090		+ -	
14	SI	0.300	+ -	0.400	0.110	+ -	0.160		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	<	+ -	NR	<	+ -	NR		+ -	
17	CL	0.030	+ -	0.030	0.140	+ -	0.140		+ -	
19	K	0.030	+ -	0.040	0.060	+ -	0.030		+ -	
20	CA	0.240	+ -	0.140	0.500	+ -	0.400		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	<	+ -	NR	<	+ -	NR		+ -	
23	V	<	+ -	NR	<	+ -	NR		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	0.010	+ -	NR	0.010	+ -	NR		+ -	
26	FE	0.210	+ -	0.180	0.130	+ -	0.110		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	<	+ -	NR	<	+ -	NR		+ -	
30	ZN	<	+ -	NR	<	+ -	NR		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	<	+ -	NR	<	+ -	NR		+ -	
201	OC	50.000	+ -	3.500	48.000	+ -	5.000		+ -	
202	EC	4.600	+ -	1.000	4.700	+ -	1.500		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		55.840			53.980			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : GRAB SAMPLES FROM CYCLONE BAGHOUSE. REF. 45.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
22202	45	SAWDUST	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	GRAB SAMPLE OF SAWDUST FROM CYCLONE CATCH.
22202			CHARACTERIZATION STUDY," REPORT TO THE	AVERAGE OF SIX SAMPLES.
22202			OREGON DEPT. ENVIRON. QUALITY. OREGON	
22202			GRADUATE CENTER (1980)	
22202				

SOURCE: VENEER DRYER
SCC: 3-07-007-01
CONTROLS: NONE

PROFILE: 22301
RANKING: 2324
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM +-	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
13	AL	<	+ -	NR	<	+ -	NR	NA	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	NA	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	NA	+ -	NR
16	S	<	+ -	NR	<	+ -	NR	NA	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	NA	+ -	NR
19	K	<	+ -	NR	<	+ -	NR	NA	+ -	NR
20	CA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	NA	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	NA	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	NA	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
26	FE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	NA	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	NA	+ -	NR
29	CU	<	+ -	NR	<	+ -	NR	NA	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	NA	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
201	OC	81.650	+ -	10.37	81.650	+ -	10.37	NA	+ -	NR
202	EC	0.767	+ -	0.522	0.767	+ -	0.522	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		82.417			82.417			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 45.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
22301	45	VENEER	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	AVERAGE OF SIX SAMPLES COLLECTED WITH A
22301		DRIER	CHARACTERIZATION STUDY," REPORT TO THE	TWO-STAGE VIRTUAL IMPACTOR FROM THREE
22301			OREGON DEPT. ENVIRON. QUALITY. OREGON	SOURCES. NO CONTROLS.
22301			GRADUATE CENTER (1980)	
22301				

SOURCE: KRAFT RECOVERY FURNANCE
SCC: 3-07-001-10
CONTROLS: ESP & WET SCRUBBER

PROFILE: 23103
RANKING: 3324
RATING : B

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	1.859	+ -	3.100	NA	+ -	NR	1.570	+ -	2.452
11	NA	25.350	+ -	13.00	NA	+ -	NR	26.740	+ -	10.74
13	AL	0.473	+ -	0.430	NA	+ -	NR	0.490	+ -	0.367
14	SI	0.219	+ -	0.170	NA	+ -	NR	0.311	+ -	0.187
15	P	0.101	+ -	0.170	NA	+ -	NR	0.135	+ -	0.143
16	S	14.440	+ -	1.800	NA	+ -	NR	14.430	+ -	1.676
17	CL	1.707	+ -	0.380	NA	+ -	NR	1.700	+ -	0.334
19	K	2.010	+ -	0.238	NA	+ -	NR	1.960	+ -	0.232
20	CA	0.063	+ -	0.094	NA	+ -	NR	0.081	+ -	0.076
22	TI	0.007	+ -	0.006	NA	+ -	NR	0.008	+ -	0.005
23	V	0.002	+ -	0.002	NA	+ -	NR	0.002	+ -	0.002
24	CR	0.008	+ -	0.012	NA	+ -	NR	0.016	+ -	0.010
25	MN	0.010	+ -	0.012	NA	+ -	NR	0.014	+ -	0.010
26	FE	0.143	+ -	0.210	NA	+ -	NR	0.147	+ -	0.168
28	NI	0.025	+ -	0.052	NA	+ -	NR	0.026	+ -	0.042
29	CU	0.001	+ -	0.001	NA	+ -	NR	0.004	+ -	0.004
30	ZN	0.014	+ -	0.018	NA	+ -	NR	0.017	+ -	0.014
33	AS	0.003	+ -	0.003	NA	+ -	NR	0.004	+ -	0.003
34	SE	0.003	+ -	0.003	NA	+ -	NR	0.005	+ -	0.004
35	BR	0.056	+ -	0.012	NA	+ -	NR	0.052	+ -	0.010
37	RB	0.012	+ -	0.004	NA	+ -	NR	0.020	+ -	0.007
38	SR	0.006	+ -	0.008	NA	+ -	NR	0.005	+ -	0.007
40	ZR	0.009	+ -	0.011	NA	+ -	NR	0.021	+ -	0.023
42	MO	0.008	+ -	0.010	NA	+ -	NR	0.010	+ -	0.010
46	PD	0.015	+ -	0.019	NA	+ -	NR	0.029	+ -	0.015
47	AG	0.018	+ -	0.019	NA	+ -	NR	0.020	+ -	0.022
48	CD	0.013	+ -	0.015	NA	+ -	NR	0.018	+ -	0.013
49	IN	0.013	+ -	0.030	NA	+ -	NR	0.039	+ -	0.061
50	SN	0.017	+ -	0.020	NA	+ -	NR	0.024	+ -	0.018
51	SB	0.010	+ -	0.060	NA	+ -	NR	0.026	+ -	0.059
56	BA	0.097	+ -	0.115	NA	+ -	NR	0.115	+ -	0.102
57	LA	0.114	+ -	0.135	NA	+ -	NR	0.218	+ -	0.217
80	HG	0.001	+ -	0.003	NA	+ -	NR	0.002	+ -	0.003
82	PB	0.016	+ -	0.020	NA	+ -	NR	0.026	+ -	0.017
201	OC	1.951	+ -	0.250	NA	+ -	NR	2.567	+ -	0.320
202	EC	0.042	+ -	0.050	NA	+ -	NR	0.142	+ -	0.132
203	SO4	51.038	+ -	9.000	NA	+ -	NR	48.812	+ -	7.379
204	NO3	0.101	+ -	0.170	NA	+ -	NR	0.126	+ -	0.144
SUM(%)		99.975			0.000			99.932		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : PROFILES INCLUDE 8% CORRECTION TO NORMALIZE DATA TO 100% REF. 49.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
23103	49	KRAFT	J.A. COOPER, C.FRAZIER AND J.E. HOUCH,	AVERAGE OF FOUR REPLICATE SAMPLES COLLECTED
23103		RECOVERY	SEATTLE-TACOMA AEROSOL CHARACTERIZATION	FROM ONE STACK USING A DILUTION SAMPLER.
23103		FURNACE	STUDY" DRAFT FINAL REPORTF TO THE PUGET	STACK FITTED WITH AN ESP FOLLOWED BY A WET
23103			SOUND AIR POLLUTION CONTROL AGENCY. NEA,INC.	SCRUBBER.
23103			1983.	
23103				

SOURCE LIBRARY

SOURCE: LIME KILN
SCC: 3-07-001-06
CONTROLS: WET SCRUBBER

PROFILE: 23202
RANKING: 3324
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE +-	FINE UNC	COARSE 2.5-10UM % BY WT	COARSE +-	COARSE UNC	TSP <30 UM % BY WT	TSP +-	TSP UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	0.038	+ -	0.007	NA	+ -	NR	1.296	+ -	0.240
11	NA	36.210	+ -	4.000	NA	+ -	NR	34.680	+ -	3.681
13	AL	0.064	+ -	0.074	NA	+ -	NR	0.303	+ -	0.094
14	SI	0.038	+ -	0.042	NA	+ -	NR	0.200	+ -	0.056
15	P	0.105	+ -	0.227	NA	+ -	NR	0.175	+ -	0.195
16	S	16.520	+ -	1.780	NA	+ -	NR	16.040	+ -	1.703
17	CL	2.618	+ -	0.282	NA	+ -	NR	2.630	+ -	0.326
19	K	1.299	+ -	0.140	NA	+ -	NR	1.280	+ -	0.136
20	CA	0.342	+ -	0.037	NA	+ -	NR	0.390	+ -	0.042
22	TI	0.004	+ -	0.003	NA	+ -	NR	0.004	+ -	0.003
23	V	0.068	+ -	0.007	NA	+ -	NR	0.063	+ -	0.007
24	CR	0.011	+ -	0.003	NA	+ -	NR	0.015	+ -	0.004
25	MN	0.015	+ -	0.003	NA	+ -	NR	0.022	+ -	0.004
26	FE	0.041	+ -	0.009	NA	+ -	NR	0.066	+ -	0.012
28	NI	0.032	+ -	0.005	NA	+ -	NR	0.047	+ -	0.006
29	CU	0.005	+ -	0.004	NA	+ -	NR	0.006	+ -	0.004
30	ZN	0.006	+ -	0.002	NA	+ -	NR	0.013	+ -	0.003
33	AS	0.003	+ -	0.007	NA	+ -	NR	0.005	+ -	0.007
34	SE	0.003	+ -	0.002	NA	+ -	NR	0.005	+ -	0.003
35	BR	0.024	+ -	0.004	NA	+ -	NR	0.023	+ -	0.004
37	RB	0.006	+ -	0.004	NA	+ -	NR	0.011	+ -	0.005
38	SR	0.003	+ -	0.005	NA	+ -	NR	0.009	+ -	0.006
39	Y	0.003	+ -	0.003	NA	+ -	NR	0.005	+ -	0.003
40	ZR	0.012	+ -	0.012	NA	+ -	NR	0.020	+ -	0.014
42	MO	0.004	+ -	0.009	NA	+ -	NR	0.033	+ -	0.019
46	PD	0.006	+ -	0.006	NA	+ -	NR	0.015	+ -	0.012
47	AG	0.027	+ -	0.020	NA	+ -	NR	0.068	+ -	0.025
48	CD	0.015	+ -	0.015	NA	+ -	NR	0.026	+ -	0.018
50	SN	0.047	+ -	0.032	NA	+ -	NR	0.069	+ -	0.038
51	SB	0.019	+ -	0.019	NA	+ -	NR	0.032	+ -	0.023
56	BA	0.029	+ -	0.029	NA	+ -	NR	0.049	+ -	0.035
57	LA	0.099	+ -	0.107	NA	+ -	NR	0.169	+ -	0.127
58	CE	0.118	+ -	0.127	NA	+ -	NR	0.201	+ -	0.151
80	HG	0.002	+ -	0.004	NA	+ -	NR	0.004	+ -	0.005
82	PB	0.018	+ -	0.011	NA	+ -	NR	0.023	+ -	0.013
201	OC	9.280	+ -	1.000	NA	+ -	NR	10.120	+ -	1.724
202	EC	0.464	+ -	0.500	NA	+ -	NR	0.576	+ -	0.481
203	SO4	48.830	+ -	8.000	NA	+ -	NR	47.197	+ -	6.881
204	NO3	0.092	+ -	0.100	NA	+ -	NR	0.150	+ -	0.113
SUM(%)		100.000			0.000			100.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : DATA NORMALIZED TO 100% WITH A 6% CORRECTION FACTOR.REF. 49.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
23202	49	LIME KILN	J.A. COOPER, C.FRAZIER AND J.E. HOUCH,	AVERAGE OF THREE REPLICATE SAMPLES FROM A
23202			SEATTLE-TACOMA AEROSOL CHARACTERIZATION	SINGLE LINE KILN STACK. STACK WAS EQUIPPED
23202			STUDY" DRAFT FINAL REPORTF TO THE PUGET	WITH A WET SCRUBBER. SAMPLES WERE COLLECTED
23202			SOUND AIR POLLUTION CONTROL AGENCY. NEA,INC.	WITH A DILUTION SAMPLER EQUIPPED WITH A
23202			1983.	TWO-STAGE VIRTUAL IMPACTOR.
23202				
23202				

SOURCE: SULFITE RECOVERY BOILER
SCC: 3-07-002-34
CONTROLS: NONE

PROFILE: 24101
RANKING: 2324
RATING : B

SPECIES	SPECIES	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	2.500	+ -	0.800	2.500	+ -	0.800	NA	+ -	NR
12	MG	0.730	+ -	0.520	0.730	+ -	0.520	NA	+ -	NR
13	AL	<	+ -	NR	<	+ -	NR	NA	+ -	NR
14	SI	0.400	+ -	0.150	0.400	+ -	0.150	NA	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	NA	+ -	NR
16	S	12.000	+ -	2.000	12.000	+ -	2.000	NA	+ -	NR
17	CL	0.580	+ -	0.100	0.580	+ -	0.100	NA	+ -	NR
19	K	30.000	+ -	10.00	30.000	+ -	10.00	NA	+ -	NR
20	CA	2.000	+ -	0.200	2.000	+ -	0.200	NA	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	NA	+ -	NR
22	TI	0.010	+ -	0.001	0.010	+ -	0.001	NA	+ -	NR
23	V	<	+ -	0.001	<	+ -	0.001	NA	+ -	NR
24	CR	<	+ -	0.001	<	+ -	0.001	NA	+ -	NR
25	MN	0.054	+ -	0.070	0.054	+ -	0.070	NA	+ -	NR
26	FE	0.066	+ -	0.036	0.066	+ -	0.036	NA	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	NA	+ -	NR
28	NI	<	+ -	0.001	<	+ -	0.001	NA	+ -	NR
29	CU	0.016	+ -	0.017	0.016	+ -	0.017	NA	+ -	NR
30	ZN	0.017	+ -	0.002	0.017	+ -	0.002	NA	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	NA	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
82	PB	<	+ -	0.030	<	+ -	0.030	NA	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	56.000	+ -	11.20	56.000	+ -	11.20	NA	+ -	NR
204	NO3	0.300	+ -	0.060	0.300	+ -	0.060	NA	+ -	NR
SUM(%)		92.673			92.673			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
24101	46	SULFITE	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	AVERAGE OF 2 SAMPLES FROM TWO PLANTS.
24101		RECOVERY	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	
24101		FURNACE	FINE AND TOTAL SUSPENDED PARTICULATE MATTER	
24101			IN PORTLAND,OREGON," PHD THESIS. OREGON	
24101			GRADUATE CENTER(1979)	
24101				
24101			PROFILES DEVELOPED DURING THE PACS STUDY	
24101			WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR	
24101			(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.	
24101			NO DILUTION AIR. UPPER CUT POINT ABOUT 20	
24101			UM, D50. ANALYSIS BY XRF AND INNA, IC AND	
24101			CARBON OXIDATION(CORRECTED FOR ARTIFACT EC).	
24101			SINCE NO DILUTION AIR WAS USED DURING	
24101			SAMPLING, THE PACS PROFILES TEND TO	
24101			UNDERESTIMATE ORGANIC CARBON.	
24101				
24101				
24101				

SOURCE: CALCIUM CARBIDE FURNACE
SCC: 3-05-009-99
CONTROLS: NONE

PROFILE: 25201
RANKING: 2324
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM +-	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	0.100	NA	+ -	0.200		+ -	
11	NA	0.920	+ -	0.100	0.430	+ -	0.050		+ -	
12	MG	2.400	+ -	0.350	1.250	+ -	0.350		+ -	
13	AL	0.580	+ -	0.110	0.860	+ -	0.130		+ -	
14	SI	2.500	+ -	0.070	2.900	+ -	1.300		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	1.600	+ -	0.420	0.540	+ -	0.570		+ -	
17	CL	1.050	+ -	0.070	0.960	+ -	0.630		+ -	
19	K	1.250	+ -	0.350	0.480	+ -	0.300		+ -	
20	CA	30.000	+ -	4.000	25.800	+ -	8.700		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	<	+ -	0.020	<	+ -	0.020		+ -	
23	V	<	+ -	NR	0.009	+ -	NR		+ -	
24	CR	<	+ -	0.010	<	+ -	0.010		+ -	
25	MN	0.042	+ -	0.003	0.036	+ -	0.010		+ -	
26	FE	0.540	+ -	0.080	0.330	+ -	0.130		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.022	+ -	0.008	0.021	+ -	0.006		+ -	
29	CU	0.020	+ -	0.011	0.040	+ -	0.004		+ -	
30	ZN	0.015	+ -	0.007	<	+ -	0.010		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	0.010	<	+ -	0.010		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.008	+ -	0.004	<	+ -	NR		+ -	
201	OC	7.300	+ -	1.300	4.500	+ -	0.780		+ -	
202	EC	1.200	+ -	0.280	3.600	+ -	1.800		+ -	
203	SO4	3.200	+ -	0.420	0.930	+ -	1.100		+ -	
204	NO3	0.570	+ -	0.240	NA	+ -	0.500		+ -	
SUM(%)		53.217			42.686			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46. THIS PROFILE WAS USED IN THE MEDFORD AEROSOL CHARACTERIZARION STUDY TO REPRESENT CEMENT DUST FROM CONSTRUCTION ACTIVITY.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
25201	46	CARBIDE	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	AVERAGE OF TWO SAMPLES FROM THE SAME SOURCE.
25201		FURNACE	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	
25201			FINE AND TOTAL SUSPENDED PARTICULATE MATTER	
25201			IN PORTLAND,OREGON," PHD THESIS. OREGON	
25201			GRADUATE CENTER(1979)	
25201				
25201			PROFILES DEVELOPED DURING THE PACS STUDY	
25201			WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR	
25201			(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.	
25201			NO DILUTION AIR. UPPER CUT POINT ABOUT 20	
25201			UM, D50. ANALYSIS BY XRF AND INNA, IC AND	
25201			CARBON OXIDATION(CORRECTED FOR ARTIFACT EC).	
25201			SINCE NO DILUTION AIR WAS USED DURING	
25201			SAMPLING, THE PACS PROFILES TEND TO	
25201			UNDERESTIMATE ORGANIC CARBON.	
25201				
25201				

SOURCE: CHARCOAL MANUFACTURING
SCC: 3-01-006-01
CONTROLS: NONE

PROFILE: 25302
RANKING: 2311
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	1.900	+ -	0.300	2.400	+ -	0.300		+ -	
13	AL	7.000	+ -	1.000	10.200	+ -	0.800		+ -	
14	SI	15.000	+ -	1.000	21.000	+ -	10.00		+ -	
15	P	NA	+ -	NR	NA	+ -	NR		+ -	
16	S	3.100	+ -	0.300	0.800	+ -	0.100		+ -	
17	CL	5.000	+ -	0.600	0.900	+ -	0.600		+ -	
19	K	7.400	+ -	0.500	3.600	+ -	0.600		+ -	
20	CA	9.500	+ -	0.600	12.900	+ -	0.800		+ -	
21	SC	NA	+ -	NR	NA	+ -	NR		+ -	
22	TI	0.360	+ -	0.090	0.680	+ -	NR		+ -	
23	V	0.028	+ -	NR	0.040	+ -	0.020		+ -	
24	CR	0.044	+ -	NR	0.050	+ -	0.020		+ -	
25	MN	0.440	+ -	0.050	0.420	+ -	0.030		+ -	
26	FE	6.400	+ -	0.400	6.600	+ -	0.400		+ -	
27	CO	NA	+ -	NR	NA	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	0.054	+ -	NR	0.022	+ -	NR		+ -	
30	ZN	0.360	+ -	NR	0.140	+ -	NR		+ -	
31	GA	NA	+ -	NR	NA	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.090	+ -	0.030	0.011	+ -	NR		+ -	
37	RB	NA	+ -	NR	NA	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	NA	+ -	NR	NA	+ -	NR		+ -	
47	AG	NA	+ -	NR	NA	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	NA	+ -	NR	NA	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	NA	+ -	NR	NA	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.090	+ -	0.030	NA	+ -	NR		+ -	
201	OC	1.800	+ -	0.900	1.800	+ -	0.900		+ -	
202	EC	5.200	+ -	0.400	5.200	+ -	0.400		+ -	
203	SO4	6.500	+ -	0.500	0.600	+ -	0.100		+ -	
204	NO3	0.300	+ -	0.200	NA	+ -	NR		+ -	
SUM(%)		67.466			66.563			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : HERCHOFF FURNACE. REF. 45

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13-Jun-85                                        SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE  |                 REFERENCE                |REFERENCE ABSTRACT                           |
NUMBER |NUMBER   |GROUP   |                                          |                                             |
-------------------------------------------------------------------------------------------------------------------|
 25302 |      45 |CHARCOAL |R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL |AVERAGE OF TWO SAMPLES COLLECTED WITH A      |
 25302 |         |MFG.     |CHARACTERIZATION STUDY," REPORT TO THE     |TWO-STAGE VIRTUAL IMPACTOR FROM A HERCHOFF   |
 25302 |         |         |OREGON DEPT. ENVIRON. QUALITY. OREGON      |FURNACE.                                     |
 25302 |         |         |GRADUATE CENTER (1980)                     |                                             |
 25302 |         |         |                                           |                                             |
```

SOURCE: SILICA MANUFACTURING
SCC: 3-05-99-999
CONTROLS: BAGHOUSE

PROFILE: 25401
RANKING: 2224
RATING : C

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	0.990	+ -	0.200	<	+ -	NR		+ -	
14	SI	45.320	+ -	9.120	46.360	+ -	9.270		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.140	+ -	0.030	<	+ -	NR		+ -	
17	CL	<	+ -	NR	<	+ -	NR		+ -	
19	K	0.280	+ -	0.060	<	+ -	NR		+ -	
20	CA	<	+ -	NR	<	+ -	NR		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.005	+ -	0.001	<	+ -	NR		+ -	
23	V	<	+ -	NR	<	+ -	NR		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	<	+ -	NR	<	+ -	NR		+ -	
26	FE	0.160	+ -	0.030	0.390	+ -	0.078		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	0.013	+ -	0.003	<	+ -	NR		+ -	
30	ZN	0.003	+ -	0.001	<	+ -	NR		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	<	+ -	NR	<	+ -	NR		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		46.911			46.750			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COARSE MODE 2.5 - 20 MM. XRF ANALYSIS, ONLY. MEAN AND STD. DEV. OF 3 TESTS.
REF: 21

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
25401	21	SILICA	J.E. CORE, "WILLAMETTE VALLEY FIELD AND	SILICA MANUFACTURING PROCESS. AVERAGE
25401		MFG.	SLASH BURNING IMPACT AIR QUALITY	VALUES AND STANDARD DEVIATIONS FROM 3 SOURCE
25401			SURVEILLANCE PROGRAM; VOLUME 3," STATE OF	TESTS AT THE OUTLET OF A BAGHOUSE. XRF
25401			OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY	ANALYSIS, ONLY.
25401			(1979). TABLE 5.2.3.	
25401				
25401			PROFILES DEVELOPED DURING THIS STUDY WERE	
25401			TAKEN USING A 2 STAGE VIRTUAL IMPACTOR (2.5	
25401			UM, D50) ADAPTED FOR SOURCE TESTING. THE	
25401			SAMPLING TRAIN INCLUDED PROVISION FOR	
25401			DILUTION AIR TO CAPTURE CONDENSIBLES.	
25401			COARSE FRACTION APPROXIMATELY 20 UM, D50.	
25401			SAMPLES ANALYZED BY XRF (5 ELEMENTS), ION	
25401			CHROMATOGRAPHY AND CARBON OXIDATION. THE	
25401			PACS PROFILE SET WAS SUPPLEMENTED WITH TEST	
25401			OF STREET AND SOIL DUST, CHARCOAL MFG, HOG	
25401			FUEL BOILERS AND SILICA MFG AS PART OF THIS	
25401			STUDY. F, NA AND MG WATER SOLUBLE IONS.	
25401				
25401				

SOURCE: ASPHALT ROOFING MANUFACTURING
SCC: 3-05-001-02
CONTROLS: UNSPECIFIED CONTROL SYSTEM

PROFILE: 25402
RANKING: 2224
RATING : C

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	<	+ -	NR	<	+ -	NR	<	+ -	NR
12	MG	<	+ -	NR	<	+ -	NR	<	+ -	NR
13	AL	<	+ -	NR	<	+ -	NR	<	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	7.600	+ -	7.000	5.000	+ -	7.000	7.330	+ -	7.000
17	CL	12.000	+ -	3.000	12.000	+ -	3.000	12.000	+ -	3.000
19	K	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
20	CA	3.400	+ -	0.700	3.400	+ -	0.700	3.400	+ -	0.700
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
25	MN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
26	FE	2.100	+ -	0.300	2.100	+ -	0.300	2.100	+ -	0.300
27	CO	1.800	+ -	0.300	1.800	+ -	0.300	1.800	+ -	0.300
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	<	+ -	NR	<	+ -	NR	<	+ -	NR
30	ZN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
201	OC	23.000	+ -	NR	23.000	+ -	NR	23.000	+ -	NR
202	EC	1.000	+ -	NR	1.000	+ -	NR	1.000	+ -	NR
203	SO4	23.000	+ -	NR	23.000	+ -	NR	23.000	+ -	NR
204	NO3	<	+ -	NR	<	+ -	NR	<	+ -	NR
SUM(%)		69.050			69.050			69.050		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 10

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
25402	10	ASPHALT	H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.	ASPHALT ROOFING AND SHINGLES MANUFACTURED BY
25402		ROOFING	BRUNETZ," FINE PARTICLE EMISSIONS FROM	SPRAYING ASPHALT ON FELT. SAMPLES TAKEN
25402			STATIONARY AND MISCELLANEOUS SOURCES IN THE	DOWNSTREAM OF A UNSPECIFIED CONTROL SYSTEM.
25402			SOUTH COAST AIR BASIN,"KVB CORP. NO	AVERAGE OF 2 SAMPLES.
25402			5806-783(1979). NTIS #PB 293923.	
25402				
25402			ALL PROFILES FROM THIS REFERENCE WERE	NOTE: ORIGIONAL DATA REPORTED AS
25402			OBTAINED USING THE EPA SOURCE ASSESSMENT	TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS
25402			SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A	(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND
25402			HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1	0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS
25402			UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND	DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE
25402			IMPINGERS OPERATED ISOKINETICALLY. CYCLONE	ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES
25402			AND FILTER CATCHES WERE ANALYZED BY XRF	>10,3-10,1-3,<1 UM. TSP PROFILE IS KVB
25402			(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE	COMPOSITE PROFILE.
25402			OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT	
25402			BE CONSIDERED QUANTITATIVE. AA WAS	
25402			OCASSIONALLY USED AS A QA MEASURE. WATER	
25402			SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE	
25402			METHOD) AND CARBON (OXIDATION/NDIR	
25402			DETECTION); CARBONATE AND "VOLATILE" CARBON	
25402			OXIDIZED AT 150 DEG.C WERE	
25402			ROUTINE.UNFORTUANTELY, SEVERAL OF THE	
25402			LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN	
25402			REPORTED AS A SUM. THIS DOCUMENT IS	
25402			REPRESENTS A RICH SOURCE OF INFORMATION.	
25402				

SOURCE: PAINT SPRAY BOOTH
SCC: 4-02-001-01
CONTROLS: WATER SPRAY BOOTH

PROFILE: 25403
RANKING: 2121
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	0.660	+ -	NR	0.660	+ -	NR	0.660	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	<	+ -	NR	<	+ -	NR	<	+ -	NR
20	CA	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	3.000	+ -	NR	3.000	+ -	NR	3.000	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
29	CU	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
30	ZN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
201	OC	40.000	+ -	NR	40.000	+ -	NR	40.000	+ -	NR
202	EC	10.000	+ -	NR	10.000	+ -	NR	10.000	+ -	NR
203	SO4	2.000	+ -	NR	2.000	+ -	NR	2.000	+ -	NR
204	NO3	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
SUM(%)		57.110			57.110			57.110		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : TC AND OC VALUES ARE ESTIMATED, NOT MEASURED. S ESTIMATED AS 1/3 OF SO4.
REF. 10 ALL SIZE FRACTIONS ASUMED SIMILAR.

```
PROFILE|REFERENCE|SOURCE  |                  REFERENCE                    |REFERENCE ABSTRACT                              |
NUMBER |NUMBER   |GROUP   |                                               |                                                |
-------------------------------------------------------------------------------------------------------------------------|
 25403 |       10 |SPRAY  |H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.    |ANALYSIS OF ONE SAMPLE TAKEN DOWNSTREAM OF A    |
 25403 |          |BOOTH  |BRUNETZ," FINE PARTICLE EMISSIONS FROM         |SELF-INDUCED WATER SPRAY CONTROL DEVICE         |
 25403 |          |       |STATIONARY AND MISCELLANEOUS SOURCES IN THE    |SERVING ON AUTOMOTIVE POINT SPRAY BOOTH         |
 25403 |          |       |SOUTH COAST AIR BASIN,"KVB CORP. NO            |(WATER BASE ENAMELS).  RESULTS FROM 10 UM       |
 25403 |          |       |5806-783(1979).  NTIS #PB 293923.              |CYCLONE, ONLY.  INSUFFICIENT MASS FOR CARBON    |
 25403 |          |       |                                               |ANALYSIS.  50% CARBON ESTIMATED BY TABACK       |
 25403 |          |       |ALL PROFILES FROM THIS REFERENCE WERE          |FROM OTHER LITERATURE.  ALL SIZE FRACTIONS      |
 25403 |          |       |OBTAINED USING THE EPA SOURCE ASSESSMENT       |ASSUMED SIMILAR.  POOR QUALITY DATA.            |
 25403 |          |       |SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A   |                                                |
 25403 |          |       |HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1   |NOTE: ORIGIONAL DATA REPORTED AS                |
 25403 |          |       |UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND   |TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS    |
 25403 |          |       |IMPINGERS OPERATED ISOKINETICALLY. CYCLONE     |(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND       |
 25403 |          |       |AND FILTER CATCHES WERE ANALYZED BY XRF        |0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS     |
 25403 |          |       |(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE   |DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE   |
 25403 |          |       |OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT   |ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES     |
 25403 |          |       |BE CONSIDERED QUANTITATIVE.  AA WAS            | >10,3-10,1-3,<1 UM. TSP PROFILE IS KVB         |
 25403 |          |       |OCASSIONALLY USED AS A QA MEASURE. WATER       |COMPOSITE PROFILE.                              |
 25403 |          |       |SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE       |                                                |
 25403 |          |       |METHOD) AND CARBON (OXIDATION/NDIR             |                                                |
 25403 |          |       |DETECTION); CARBONATE AND "VOLATILE" CARBON    |                                                |
 25403 |          |       |OXIDIZED AT 150 DEG.C WERE                     |                                                |
 25403 |          |       |ROUTINE.UNFORTUANTELY, SEVERAL OF THE          |                                                |
 25403 |          |       |LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN       |                                                |
 25403 |          |       |REPORTED AS A SUM. THIS DOCUMENT IS            |                                                |
 25403 |          |       |REPRESENTS A RICH SOURCE OF INFORMATION.       |                                                |
 25403 |          |       |                                               |                                                |
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SOURCE: UREA FERTILIZER PRODUCTION
SCC: 3-01-040-01
CONTROLS: CYCLONE & BAGHOUSE

PROFILE: 25404
RANKING: 2221
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
15	P	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
16	S	1.300	+ -	NR	2.000	+ -	NR	2.600	+ -	NR
17	CL	11.000	+ -	NR	7.000	+ -	NR	5.000	+ -	NR
19	K	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
20	CA	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
26	FE	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
27	CO	0.050	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
29	CU	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
30	ZN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
35	BR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	0.050	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
201	OC	31.000	+ -	NR	31.000	+ -	NR	31.000	+ -	NR
202	EC	2.000	+ -	NR	2.000	+ -	NR	2.000	+ -	NR
203	SO4	4.000	+ -	NR	6.000	+ -	NR	8.000	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		51.400			50.050			50.700		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : AVERAGE OF TWO TESTS. A MAJOR COMPONENT, UREA, NOT REPORTED. REF. 10

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PROFILE|REFERENCE|SOURCE    |                  REFERENCE                  |REFERENCE ABSTRACT                            |
NUMBER |NUMBER   |GROUP     |                                             |                                              |
-----------------------------------------------------------------------------------------------------------------------------|
 25404 |       10 |FERTILIZE|H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.   |RAW MATERIALS ARE WEIGHED, CRUSHED AND        |
 25404 |          |MFG      |BRUNETZ," FINE PARTICLE EMISSIONS FROM        |PRESSED INTO GRANULES WHICH ARE THEN DRIED    |
 25404 |          |         |STATIONARY AND MISCELLANEOUS SOURCES IN THE   |IN A ROTORY KILN. KILN EMISSIONS              |
 25404 |          |         |SOUTH COAST AIR BASIN,"KVB CORP. NO           |PASS THRU A CYCLONE AND BAGHOUSE.  AVERAGE    |
 25404 |          |         |5806-783(1979).  NTIS #PB 293923.             |OF TWO SAMPLES TAKEN AT BAGHOUSE EXIT.  UREA  |
 25404 |          |         |                                              |AND PHOSPHOROUS WERE MAJOR COMPONENTS OF THE  |
 25404 |          |         |ALL PROFILES FROM THIS REFERENCE WERE         |PROFILE, BUT WERE NOT REPORTED.               |
 25404 |          |         |OBTAINED USING THE EPA SOURCE ASSESSMENT      |                                              |
 25404 |          |         |SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A  |NOTE: ORIGIONAL DATA REPORTED AS              |
 25404 |          |         |HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1  |TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS  |
 25404 |          |         |UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND  |(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND     |
 25404 |          |         |IMPINGERS OPERATED ISOKINETICALLY. CYCLONE    |0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS   |
 25404 |          |         |AND FILTER CATCHES WERE ANALYZED BY XRF       |DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE|
 25404 |          |         |(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE  |ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES   |
 25404 |          |         |OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT  | >10,3-10,1-3,<1 UM. TSP PROFILE IS KVB       |
 25404 |          |         |BE CONSIDERED QUANTITATIVE.  AA WAS           |COMPOSITE PROFILE.                            |
 25404 |          |         |OCASSIONALLY USED AS A QA MEASURE. WATER      |                                              |
 25404 |          |         |SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE      |                                              |
 25404 |          |         |METHOD) AND CARBON (OXIDATION/NDIR            |                                              |
 25404 |          |         |DETECTION); CARBONATE AND "VOLATILE" CARBON   |                                              |
 25404 |          |         |OXIDIZED AT 150 DEG.C WERE                    |                                              |
 25404 |          |         |ROUTINE.UNFORTUANTELY, SEVERAL OF THE         |                                              |
 25404 |          |         |LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN      |                                              |
 25404 |          |         |REPORTED AS A SUM. THIS DOCUMENT IS           |                                              |
 25404 |          |         |REPRESENTS A RICH SOURCE OF INFORMATION.      |                                              |
 25404 |          |         |                                              |                                              |
```

SOURCE: BORIC ACID MANUFACTURING
SCC: 3-01-999-99
CONTROLS: BAGHOUSE

PROFILE: 25405
RANKING: 2221
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	77.640	+ -	NR	77.640	+ -	NR	77.640	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	0.660	+ -	NR	0.660	+ -	NR	0.660	+ -	NR
17	CL	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
19	K	<	+ -	NR	<	+ -	NR	<	+ -	NR
20	CA	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
29	CU	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
30	ZN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
48	CD	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
201	OC	3.900	+ -	NR	3.900	+ -	NR	3.900	+ -	NR
202	EC	0.100	+ -	NR	0.100	+ -	NR	0.100	+ -	NR
203	SO4	2.000	+ -	NR	2.000	+ -	NR	2.000	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		86.250			86.250			86.250		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : BORON VALUE CALCULATED FROM ORIGINAL DATA THAT REPORTED 98% OF EMISSIONS OR H3BO3. S ESTIMATED FROM SO4. NEARLY A PURE BORON SOURCE. REF. 10

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
25405	10	BORIC	H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.	H2SO4 IS USED TO REDUCE BORAX TO BORIC ACID
25405		ACID	BRUNETZ," FINE PARTICLE EMISSIONS FROM	AND GLAUBER SALT (NA2SO4. 10 H2O). BORIC
25405		MFG	STATIONARY AND MISCELLANEOUS SOURCES IN THE	ACID CAKE IS THEN RECRYSTALIZED, DRIED AND
25405			SOUTH COAST AIR BASIN,"KVB CORP. NO	SCREENED AS IS THE GLAUBER SALT. PROFILE IS
25405			5806-783(1979). NTIS #PB 293923.	AN AVERAGE OF 2 TESTS AT THE OUTLET OF THE
25405				BORIC ACID DRIER BAGHOUSE.
25405			ALL PROFILES FROM THIS REFERENCE WERE	
25405			OBTAINED USING THE EPA SOURCE ASSESSMENT	NOTE: ORIGIONAL DATA REPORTED AS
25405			SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A	TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS
25405			HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1	(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND
25405			UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND	0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS
25405			IMPINGERS OPERATED ISOKINETICALLY. CYCLONE	DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE
25405			AND FILTER CATCHES WERE ANALYZED BY XRF	ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES
25405			(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE	>10,3-10,1-3,<1 UM. TSP PROFILE IS KVB
25405			OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT	COMPOSITE PROFILE.
25405			BE CONSIDERED QUANTITATIVE. AA WAS	
25405			OCASSIONALLY USED AS A QA MEASURE. WATER	
25405			SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE	
25405			METHOD) AND CARBON (OXIDATION/NDIR	
25405			DETECTION); CARBONATE AND "VOLATILE" CARBON	
25405			OXIDIZED AT 150 DEG.C WERE	
25405			ROUTINE.UNFORTUANTELY, SEVERAL OF THE	
25405			LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN	
25405			REPORTED AS A SUM. THIS DOCUMENT IS	
25405			REPRESENTS A RICH SOURCE OF INFORMATION.	
25405				
25405				
25405				

SOURCE: CARBORUNDUM MANUFACTURING
SCC: 3-05-009-99
CONTROLS: NONE

PROFILE: 25406
RANKING: 2324
RATING : B

			FINE			COARSE			TSP	
SPECIES NUMBER	SPECIES NAME	********* % BY WT	<2.5 UM + -	****** UNC	********* % BY WT	2.5-10UM +-	****** UNC	********* % BY WT	<30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	0.050	+ -	0.030	NA	+ -	0.400		+ -	
11	NA	0.120	+ -	0.100	0.260	+ -	0.170		+ -	
12	MG	0.780	+ -	1.200	<	+ -	0.400		+ -	
13	AL	0.350	+ -	0.400	2.800	+ -	4.300		+ -	
14	SI	3.500	+ -	4.300	12.000	+ -	15.00		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	4.800	+ -	6.600	0.410	+ -	0.310		+ -	
17	CL	1.700	+ -	1.500	0.990	+ -	0.430		+ -	
19	K	0.790	+ -	1.100	0.720	+ -	1.100		+ -	
20	CA	0.140	+ -	0.130	0.570	+ -	0.490		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.014	+ -	0.019	0.033	+ -	0.490		+ -	
23	V	0.007	+ -	0.008	0.012	+ -	0.010		+ -	
24	CR	0.009	+ -	0.011	0.004	+ -	0.007		+ -	
25	MN	0.035	+ -	0.041	0.029	+ -	0.025		+ -	
26	FE	0.330	+ -	0.610	0.270	+ -	0.210		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.004	+ -	0.007	0.017	+ -	0.230		+ -	
29	CU	0.019	+ -	0.023	0.055	+ -	0.018		+ -	
30	ZN	0.004	+ -	0.004	<	+ -	0.010		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.017	+ -	0.010	0.011	+ -	0.009		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	<	+ -	0.010	<	+ -	0.010		+ -	
201	OC	21.400	+ -	7.400	4.600	+ -	2.300		+ -	
202	EC	13.670	+ -	13.00	24.000	+ -	15.00		+ -	
203	SO4	16.000	+ -	25.00	1.600	+ -	1.830		+ -	
204	NO3	1.600	+ -	2.100	0.830	+ -	0.480		+ -	
SUM(%)		65.339			49.211			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46. FRACTION EC,OC CORRECTED BY SHAW. REF. 54.

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PROFILE|REFERENCE|SOURCE  |                  REFERENCE                  |REFERENCE ABSTRACT                              |
NUMBER |NUMBER   |GROUP   |                                             |                                                |
-----------------------------------------------------------------------------------------------------------------------
 25406 |'46,54    |CARBOR-  |J.G.WATSON,"CHEMICAL ELEMENT BALANCE        |MANUFACTURE OF SILICON CARBIDE.  COKE IS        |
 25406 |          |UNDUM    |RECEPTOR MODEL METHODOLOGY FOR SOURCES OF   |LAID OUT BETWEEN TWO ELECTRODES AND COVERED     |
 25406 |          |         |FINE AND TOTAL SUSPENDED PARTICULATE MATTER |WITH SAND.  CURRENT IS APPLIED AND AFTER 17     |
 25406 |          |         |IN PORTLAND,OREGON," PHD THESIS. OREGON     |HOURS OF COOKING, THE SIDE AND RESIDUAL SAND    |
 25406 |          |         |GRADUATE CENTER(1979)                       |IS PULLED AWAY TO EXPOSE THE SILICON CARBIDE    |
 25406 |          |         |                                            |INGOT.  FREQUENTLY (2-3/HRS) THERE IS AN        |
 25406 |          |         |PROFILES DEVELOPED DURING THE PACS STUDY    |UNUSUAL BUILDUP OF SI VAPORS AND A BLOWOUT      |
 25406 |          |         |WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR  |OCCURS.  SAMPLES WERE COLLECTED FROM A          |
 25406 |          |         |(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.  |PLATFORM IN THE ROOF EXHAUST VENT.  THERE IS    |
 25406 |          |         |NO DILUTION AIR. UPPER CUT POINT ABOUT 20   |NO CONTROL AND THE SAMPLED AEROSOL              |
 25406 |          |         |UM, D50. ANALYSIS BY XRF AND INNA, IC AND   |REPRESENTS WHAT IS EMITTED TO THE AIR.          |
 25406 |          |         |CARBON OXIDATION(CORRECTED FOR ARTIFACT EC).|AVERAGE OF FOUR SAMPLES FROM THE BURN CYCLE     |
 25406 |          |         |SINCE NO DILUTION AIR WAS USED DURING       |AND BOTTOM REMOVAL.  SAMPLES ARE ALL FROM       |
 25406 |          |         |SAMPLING, THE PACS PROFILES TEND TO         |THE SAME PLANT.EC,OC DATA REVISED BY SHAH,      |
 25406 |          |         |UNDERESTIMATE ORGANIC CARBON.               |REF. 54.                                        |
 25406 |          |         |                                            |                                                |
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13-Jun-85

SOURCE LIBRARY

SOURCE: PHOSPHROUS PLANT PLUME
SCC: 3-01-999-99
CONTROLS: NONE

PROFILE: 25407
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		NA	+ -	NR
12	MG		+ -			+ -		NA	+ -	NR
13	AL		+ -			+ -		1.250	+ -	0.250
14	SI		+ -			+ -		2.790	+ -	1.540
15	P		+ -			+ -		3.400	+ -	0.300
16	S		+ -			+ -		0.300	+ -	0.090
17	CL		+ -			+ -		0.040	+ -	0.030
19	K		+ -			+ -		0.340	+ -	0.060
20	CA		+ -			+ -		0.940	+ -	0.280
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.018	+ -	NR
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		0.015	+ -	NR
25	MN		+ -			+ -		<	+ -	NR
26	FE		+ -			+ -		0.260	+ -	0.060
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		<	+ -	NR
29	CU		+ -			+ -		<	+ -	NR
30	ZN		+ -			+ -		0.220	+ -	0.030
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		<	+ -	NR
34	SE		+ -			+ -		0.012	+ -	NR
35	BR		+ -			+ -		<	+ -	NR
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		0.013	+ -	0.015
46	PD		+ -			+ -		0.021	+ -	0.040
47	AG		+ -			+ -		0.030	+ -	0.060
48	CD		+ -			+ -		0.041	+ -	0.083
50	SN		+ -			+ -		0.130	+ -	0.110
51	SB		+ -			+ -		0.100	+ -	0.210
49	IN		+ -			+ -		0.090	+ -	0.093
56	BA		+ -			+ -		0.700	+ -	0.600
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		0.040	+ -	0.030
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			10.750		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 44.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
25407	44	PHOSPHU-	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	ELEMENTAL PHOSPHOROUS PLANT. PLUME SAMPLE
25407		ROUS	CHEMICAL MASS BALANCE,"STATE OF MONTANA	COLLECTED WITH A LOW-VOLUME SAMPLER AND
25407		PLANT	DEPT. HEALTH AND ENVIR. SCIENCES (1982)	AIRCRAFT.
25407				

SOURCE: REFINERY PROCESS HEATERS (GAS)
SCC: 3-06-001-02
CONTROLS: NONE

PROFILE: 26101
RANKING: 2221
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	15.600	+ -	NR	15.600	+ -	NR	15.600	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	<	+ -	NR	<	+ -	NR	<	+ -	NR
20	CA	5.000	+ -	NR	5.000	+ -	NR	5.000	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
25	MN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
26	FE	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
27	CO	2.000	+ -	NR	2.000	+ -	NR	2.000	+ -	NR
28	NI	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
29	CU	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
30	ZN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
35	BR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
40	ZR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
201	OC	7.000	+ -	NR	7.000	+ -	NR	7.000	+ -	NR
202	EC	<	+ -	NR	<	+ -	NR	<	+ -	NR
203	SO4	47.000	+ -	NR	47.000	+ -	NR	47.000	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		64.600			64.600			64.600		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF 10

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PROFILE|REFERENCE|SOURCE  |                  REFERENCE                   |REFERENCE ABSTRACT                                  |
NUMBER |NUMBER   |GROUP   |                                              |                                                    |
-----------------------------------------------------------------------------------------------------------------------------|
 26101 |       10 |REFINERY |H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.   |NATURAL GAS-FIRED PROCESS HEATER (1                 |
 26101 |          |PROCESS  |BRUNETZ," FINE PARTICLE EMISSIONS FROM        |SAMPLE).  FRACTION <1UM WAS THE ONLY SAMPLE         |
 26101 |          |HEATERS  |STATIONARY AND MISCELLANEOUS SOURCES IN THE   |WITH SUFFICIENT MASS FOR ANALYSIS.  ALL             |
 26101 |          |         |SOUTH COAST AIR BASIN,"KVB CORP. NO           |FRACTION ASSUMED OF SIMILAR COMPOSITION             |
 26101 |          |         |5806-783(1979).  NTIS #PB 293923.             |BASED ON MASS DISTRIBUTION.                         |
 26101 |          |         |                                              |                                                    |
 26101 |          |         |ALL PROFILES FROM THIS REFERENCE WERE         |                                                    |
 26101 |          |         |OBTAINED USING THE EPA SOURCE ASSESSMENT      |NOTE: ORIGIONAL DATA REPORTED AS                    |
 26101 |          |         |SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A  |TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS        |
 26101 |          |         |HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1  |(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND           |
 26101 |          |         |UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND  |0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS         |
 26101 |          |         |IMPINGERS OPERATED ISOKINETICALLY. CYCLONE    |DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE|
 26101 |          |         |AND FILTER CATCHES WERE ANALYZED BY XRF       |ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES         |
 26101 |          |         |(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE  | >10,3-10,1-3,<1 UM. TSP PROFILE IS KVB             |
 26101 |          |         |OCASSIONALLY REPORTED BUT RESULTS [illegible]ULD NOT |COMPOSITE PROFILE.                           |
 26101 |          |         |BE CONSIDERED QUANTITATIVE.  AA WAS           |                                                    |
 26101 |          |         |OCASSIONALLY USED AS A QA MEASURE. WATER      |                                                    |
 26101 |          |         |SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE      |                                                    |
 26101 |          |         |METHOD) AND CARBON (OXIDATION/NDIR            |                                                    |
 26101 |          |         |DETECTION); CARBONATE AND "VOLATILE" CARBON   |                                                    |
 26101 |          |         |OXIDIZED AT 150 DEG.C WERE                    |                                                    |
 26101 |          |         |ROUTINE.UNFORTUANTELY, SEVERAL OF THE         |                                                    |
 26101 |          |         |LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN      |                                                    |
 26101 |          |         |REPORTED AS A SUM. THIS DOCUMENT IS           |                                                    |
 26101 |          |         |REPRESENTS A RICH SOURCE OF INFORMATION.      |                                                    |
 26101 |          |         |                                              |                                                    |
```

SOURCE: PETROLEUM REFINERY CATALYTIC CRACKER
SCC: 3-06-002-01
CONTROLS: ESP

PROFILE: 26202
RANKING: 3321
RATING : B

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	4.968	+ -	0.227	23.469	+ -	1.914		+ -	
14	SI	11.796	+ -	0.537	50.570	+ -	4.227		+ -	
15	P	0.000	+ -	0.074	0.000	+ -	0.315		+ -	
16	S	4.511	+ -	0.209	2.237	+ -	0.750		+ -	
17	CL	0.000	+ -	0.052	0.000	+ -	0.183		+ -	
19	K	0.038	+ -	0.002	0.117	+ -	0.018		+ -	
20	CA	0.036	+ -	0.002	0.155	+ -	0.018		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.117	+ -	0.053	0.117	+ -	0.275		+ -	
23	V	0.000	+ -	0.023	0.000	+ -	0.121		+ -	
24	CR	0.000	+ -	0.011	0.000	+ -	0.055		+ -	
25	MN	0.000	+ -	0.003	0.000	+ -	0.018		+ -	
26	FE	0.247	+ -	0.012	0.567	+ -	0.067		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.027	+ -	0.001	0.059	+ -	0.010		+ -	
29	CU	0.003	+ -	0.000	0.005	+ -	0.004		+ -	
30	ZN	0.005	+ -	0.000	0.012	+ -	0.003		+ -	
31	GA	0.002	+ -	0.000	0.005	+ -	0.002		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.000	+ -	0.001	0.000	+ -	0.007		+ -	
34	SE	0.002	+ -	0.000	0.007	+ -	0.003		+ -	
35	BR	0.000	+ -	0.000	0.003	+ -	0.004		+ -	
37	RB	0.001	+ -	0.000	0.003	+ -	0.004		+ -	
38	SR	0.005	+ -	0.000	0.006	+ -	0.005		+ -	
40	ZR	0.000	+ -	0.002	0.026	+ -	0.025		+ -	
47	AG	0.000	+ -	0.002	0.045	+ -	0.022		+ -	
48	CD	0.000	+ -	0.002	0.019	+ -	0.030		+ -	
50	SN	0.001	+ -	0.003	0.000	+ -	0.042		+ -	
51	SB	0.002	+ -	0.005	0.000	+ -	0.080		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.000	+ -	0.012	0.308	+ -	0.196		+ -	
57	LA	0.246	+ -	0.025	0.645	+ -	0.334		+ -	
80	HG	0.000	+ -	0.000	0.006	+ -	0.006		+ -	
82	PB	0.008	+ -	0.001	0.023	+ -	0.012		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		22.015			78.404			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COARSE FRACTION 2.5-7.0 UM, D50. REF. 52.
SEMIQUANTITATIVE XRF ANALYSIS INDICATED ABOUT 0.2% ND AND 0.2% CE.

13-Jun-85

SOURCE LIBRARY ABSTRACT

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PROFILE|REFERENCE|SOURCE   |                  REFERENCE                    |REFERENCE ABSTRACT                                |
NUMBER |NUMBER   |GROUP    |                                               |                                                  |
-------------------------------------------------------------------------------------------------------------------------------|
 26202 |       52 |REFINING-|J.E. HOWES,J.A.COOPER AND J.E.                 |CATALYTIC CRACKER WITH NIGERIAN/NORTH SLOPE       |
 26202 |          |CATALYTIC|HOUCK,"SAMPLING AND ANALYSIS TO DETERMINE     |FEEDSTOCK CRUDE. ESP CONTROLS. CATALYST IS        |
 26202 |          |CRACKER  |SOURCE SIGNATURES IN THE PHILADELPHIA AREA,"  |33% AL203 CONTAINING 501 PPM NI AND 650 PPM       |
 26202 |          |    .    |DRAFT FINAL REPORT TO US EPA ENVIRON.         |V. SAMPLE COLLECTED WITH DILUTION SAMPLER.        |
 26202 |          |         |SCIENCE RES. LAB. RTP, N.C. BY NEA,           |REPRESENTATIVE SAMPLE FROM A GROUP OF 9. XRF      |
 26202 |          |         |INC.(1983)                                    |ANALYSIS AND ANALYTICAL UNCERTAINTIES.            |
 26202 |          |         |                                               |                                                  |
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SOURCE: GLASS FURNACE
SCC: 3-05-014-02
CONTROLS: NONE

PROFILE: 27102
RANKING: 3324
RATING : B

SPECIES NUMBER	SPECIES NAME	********* FINE <2.5 UM % BY WT	+ -	****** UNC	********* COARSE 2.5-10UM % BY WT	+-	****** UNC	********* TSP <30 UM % BY WT	+-	****** UNC
4	BE	0.003	+ -	0.003		+ -		NA	+ -	NR
5	B	0.010	+ -	0.010		+ -		NA	+ -	NR
9	F	0.027	+ -	0.006		+ -		0.025	+ -	0.005
11	NA	12.800	+ -	1.280		+ -		NA	+ -	NR
12	MG	0.183	+ -	0.018		+ -		NA	+ -	NR
13	AL	0.011	+ -	0.011		+ -		0.028	+ -	0.010
14	SI	0.320	+ -	0.060		+ -		0.347	+ -	0.055
15	P	0.025	+ -	0.025		+ -		0.032	+ -	0.024
16	S	17.600	+ -	1.760		+ -		17.512	+ -	1.751
17	CL	0.016	+ -	0.003		+ -		0.020	+ -	0.007
19	K	1.800	+ -	0.180		+ -		1.835	+ -	0.183
20	CA	0.427	+ -	0.043		+ -		0.461	+ -	0.046
21	SC	<	+ -	NR		+ -		<	+ -	NR
22	TI	0.004	+ -	NR		+ -		0.005	+ -	NR
23	V	0.006	+ -	NR		+ -		0.006	+ -	NR
24	CR	0.215	+ -	0.021		+ -		0.218	+ -	0.022
25	MN	0.003	+ -	0.001		+ -		0.003	+ -	NR
26	FE	0.026	+ -	0.003		+ -		0.034	+ -	0.006
27	CO	0.020	+ -	0.020		+ -		<	+ -	NR
28	NI	0.004	+ -	NR		+ -		0.004	+ -	NR
29	CU	0.001	+ -	NR		+ -		0.001	+ -	NR
30	ZN	0.022	+ -	0.002		+ -		0.023	+ -	0.002
31	GA	<	+ -	NR		+ -		<	+ -	NR
32	GE	<	+ -	NR		+ -		<	+ -	NR
33	AS	0.023	+ -	0.002		+ -		0.023	+ -	0.002
34	SE	0.014	+ -	0.003		+ -		0.014	+ -	0.003
35	BR	0.004	+ -	NR		+ -		0.004	+ -	NR
37	RB	0.013	+ -	0.001		+ -		0.013	+ -	0.001
38	SR	0.003	+ -	NR		+ -		0.003	+ -	NR
42	MO	0.042	+ -	0.004		+ -		0.044	+ -	0.004
47	AG	0.001	+ -	0.001		+ -		0.001	+ -	0.001
48	CD	0.003	+ -	0.002		+ -		0.003	+ -	0.002
50	SN	0.015	+ -	0.003		+ -		0.014	+ -	0.003
51	SB	0.002	+ -	0.002		+ -		0.002	+ -	0.003
55	CS	<	+ -	NR		+ -		<	+ -	NR
56	BA	0.003	+ -	0.001		+ -		0.009	+ -	0.008
58	CE	<	+ -	NR		+ -		<	+ -	NR
80	HG	<	+ -	NR		+ -		<	+ -	NR
82	PB	0.195	+ -	0.019		+ -		0.194	+ -	0.019
201	OC	0.710	+ -	0.080		+ -		1.050	+ -	0.105
202	EC	0.062	+ -	0.080		+ -		0.154	+ -	0.105
203	SO4	48.900	+ -	7.300		+ -		50.341	+ -	6.579
204	NO3	0.015	+ -	0.003		+ -		0.018	+ -	0.006
SUM(%)		-65.928			0.000			54.929		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 49.

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13-Jun-85                                   SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE   |                 REFERENCE                     |REFERENCE ABSTRACT                              |
NUMBER |NUMBER   |GROUP    |                                               |                                                |
--------------------------------------------------------------------------------------------------------------------------|
 27102 |      49 |GLASS    |J.A. COOPER, C.FRAZIER AND J.E. HOUCH,         |GLASS MELTING FURNACE AT A RECYCLING PLANT.     |
 27102 |         |FURNACE  |SEATTLE-TACOMA AEROSOL CHARACTERIZATION        |AVERAGE OF THREE REPLICATE SAMPLES COLLECTED    |
 27102 |         |         |STUDY" DRAFT FINAL REPORTF TO THE PUGET        |WITH DILUTION SAMPLER.  NO CONTROL              |
 27102 |         |         |SOUND AIR POLLUTION CONTROL AGENCY. NEA,INC.   |EQUIPMENT.  NATURAL GAS AND ELECTRICALLY        |
 27102 |         |         |1983.                                          |FIRED; EMERALD GREEN GLASS BEING FIRED          |
 27102 |         |         |                                               |DURING TEST PERIOD.  RAW MATERIALS TO           |
 27102 |         |         |                                               |FURNACE INCLUDED SILICA SAND, LIMESTONE,        |
 27102 |         |         |                                               |SODA ASH AND RECYCLED GLASS.  SIX TYPES OF      |
 27102 |         |         |                                               |GLASS PRODUCED AT PLANT:  FLINT, AMBER,         |
 27102 |         |         |                                               |EMERALD GREEN, CHAMPAGNE GREEN, SMOKEY          |
 27102 |         |         |                                               |GREEN, AND DEAD LEAF GREEN.  SELENIUM FLUX      |
 27102 |         |         |                                               |USED AS A DECOLORIZING AGENT.                   |
 27102 |         |         |                                               |                                                |
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SOURCE: CEMENT KILN (GAS - FIRED)
SCC: 3-05-016-03
CONTROLS: BAGHOUSE

PROFILE: 27201
RANKING: 2221
RATING : D

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	2.400	+ -	0.400	<	+ -	NR	2.200	+ -	0.800
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	2.400	+ -	0.400	1.500	+ -	0.300	1.400	+ -	0.300
20	CA	16.100	+ -	3.000	22.000	+ -	3.000	27.000	+ -	3.000
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.550	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	0.550	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	<	+ -	NR	0.550	+ -	NR	1.200	+ -	0.100
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	<	+ -	NR	<	+ -	NR	<	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	<	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
201	OC	NA	+ -	NR	2.660	+ -	NR	3.220	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	4.270	+ -	NR	1.680	+ -	NR	1.260	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
205	CO3	<	+ -	NR	8.100	+ -	NR	8.790	+ -	NR
SUM(%)		23.870			28.940			35.180		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 10

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
27201	10	CEMENT	H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.	AVERAGE OF TWO SAMPLES TAKEN DOWNSTREAM OF A
27201		KILN	BRUNETZ," FINE PARTICLE EMISSIONS FROM	GAS-FILED ROTARY KILN BAGHOUSE
27201			STATIONARY AND MISCELLANEOUS SOURCES IN THE	
27201			SOUTH COAST AIR BASIN,"KVB CORP. NO	
27201			5806-783(1979). NTIS #PB 293923.	
27201				
27201			ALL PROFILES FROM THIS REFERENCE WERE	NOTE: ORIGIONAL DATA REPORTED AS
27201			OBTAINED USING THE EPA SOURCE ASSESSMENT	TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS
27201			SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A	(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND
27201			HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1	0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS
27201			UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND	DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE
27201			IMPINGERS OPERATED ISOKINETICALLY. CYCLONE	ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES
27201			AND FILTER CATCHES WERE ANALYZED BY XRF	>10,3-10,1-3,<1 UM. TSP PROFILE IS KVB
27201			(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE	COMPOSITE PROFILE.
27201			OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT	
27201			BE CONSIDERED QUANTITATIVE. AA WAS	
27201			OCASSIONALLY USED AS A QA MEASURE. WATER	
27201			SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE	
27201			METHOD) AND CARBON (OXIDATION/NDIR	
27201			DETECTION); CARBONATE AND "VOLATILE" CARBON	
27201			OXIDIZED AT 150 DEG.C WERE	
27201			ROUTINE.UNFORTUANTELY, SEVERAL OF THE	
27201			LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN	
27201			REPORTED AS A SUM. THIS DOCUMENT IS	
27201			REPRESENTS A RICH SOURCE OF INFORMATION.	
27201				

SOURCE: CEMENT KILN (COAL FIRED)
SCC: 3-05-007-06
CONTROLS: ESP

PROFILE: 27203
RANKING: 3324
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	0.020	+ -	0.020	NA	+ -	NR	NA	+ -	NR
5	B	0.050	+ -	0.050	NA	+ -	NR	NA	+ -	NR
9	F	0.200	+ -	0.028	NA	+ -	NR	0.200	+ -	0.109
11	NA	2.290	+ -	0.460	NA	+ -	NR	NA	+ -	NR
12	MG	0.240	+ -	0.024	NA	+ -	NR	NA	+ -	NR
13	AL	4.280	+ -	0.430	NA	+ -	NR	4.106	+ -	0.411
14	SI	8.440	+ -	0.844	NA	+ -	NR	8.896	+ -	1.362
15	P	0.017	+ -	0.075	NA	+ -	NR	0.029	+ -	0.049
16	S	6.800	+ -	1.400	NA	+ -	NR	5.000	+ -	0.912
17	CL	7.800	+ -	1.900	NA	+ -	NR	4.392	+ -	0.771
19	K	5.400	+ -	1.500	NA	+ -	NR	3.792	+ -	0.622
20	CA	10.000	+ -	1.300	NA	+ -	NR	14.800	+ -	1.480
22	TI	0.298	+ -	0.036	NA	+ -	NR	0.302	+ -	0.032
23	V	0.010	+ -	0.002	NA	+ -	NR	0.011	+ -	0.001
24	CR	0.027	+ -	0.024	NA	+ -	NR	0.016	+ -	0.010
25	MN	0.034	+ -	0.019	NA	+ -	NR	0.027	+ -	0.008
26	FE	0.930	+ -	0.140	NA	+ -	NR	1.038	+ -	0.104
27	CO	0.100	+ -	0.100	NA	+ -	NR	NA	+ -	NR
28	NI	0.093	+ -	0.096	NA	+ -	NR	0.043	+ -	0.038
29	CU	0.023	+ -	0.004	NA	+ -	NR	0.017	+ -	0.002
30	ZN	0.217	+ -	0.022	NA	+ -	NR	0.203	+ -	0.020
33	AS	0.004	+ -	0.010	NA	+ -	NR	0.005	+ -	0.006
34	SE	0.010	+ -	0.003	NA	+ -	NR	0.009	+ -	0.002
35	BR	0.020	+ -	0.006	NA	+ -	NR	0.012	+ -	0.002
37	RB	0.075	+ -	0.019	NA	+ -	NR	0.055	+ -	0.008
38	SR	0.032	+ -	0.003	NA	+ -	NR	0.037	+ -	0.004
40	ZR	0.006	+ -	0.009	NA	+ -	NR	0.004	+ -	0.004
42	MO	0.016	+ -	0.015	NA	+ -	NR	0.018	+ -	0.012
46	PD	0.005	+ -	0.009	NA	+ -	NR	0.003	+ -	0.004
47	AG	0.006	+ -	0.004	NA	+ -	NR	0.003	+ -	0.003
48	CD	0.016	+ -	0.015	NA	+ -	NR	0.010	+ -	0.007
49	IN	0.006	+ -	0.008	NA	+ -	NR	0.004	+ -	0.004
50	SN	0.004	+ -	0.004	NA	+ -	NR	0.004	+ -	0.003
56	BA	0.034	+ -	0.007	NA	+ -	NR	0.026	+ -	0.013
57	LA	0.024	+ -	0.024	NA	+ -	NR	0.025	+ -	0.018
80	HG	0.001	+ -	0.001	NA	+ -	NR	0.001	+ -	NR
82	PB	1.820	+ -	0.280	NA	+ -	NR	1.346	+ -	0.136
83	BI	1.000	+ -	1.000	NA	+ -	NR	NA	+ -	NR
201	OC	5.400	+ -	0.600	NA	+ -	NR	6.654	+ -	0.665
202	EC	0.200	+ -	0.400	NA	+ -	NR	0.188	+ -	0.288
203	SO4	18.300	+ -	6.400	NA	+ -	NR	14.520	+ -	7.642
204	NO3	0.200	+ -	0.040	NA	+ -	NR	0.740	+ -	0.660
SUM(%)		74.448			0.000			66.536		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :REF. 49.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
27203	49	CEMENT	J.A. COOPER, C.FRAZIER AND J.E. HOUCH,	AVERAGE OF TWO REPLICATE SAMPLES COLLECTED
27203		KILN	SEATTLE-TACOMA AEROSOL CHARACTERIZATION	FROM A SINGLE STACK. FUEL BEING USED AT THE
27203			STUDY" DRAFT FINAL REPORTF TO THE PUGET	TIME OF SAMPLING WAS COAL. STACK EQUIPPED
27203			SOUND AIR POLLUTION CONTROL AGENCY. NEA,INC.	WITH MULTICYCLONE AND AN ESP. EMISSIONS
27203			1983.	SAMPLED WITH A DILUTION SAMPLER EQUIPPED
27203				WITH A TWO-STAGE VIRTUAL IMPACTOR.
27203				

13-Jun-85

SOURCE LIBRARY

SOURCE: GYPSUM CALCINER
SCC: 3-05-015-02
CONTROLS: BAGHOUSE

PROFILE: 27501
RANKING: 2221
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	13.600	+ -	NR	19.000	+ -	NR	18.300	+ -	NR
17	CL	0.550	+ -	NR	<	+ -	NR	0.550	+ -	NR
19	K	0.550	+ -	NR	0.050	+ -	NR	0.550	+ -	NR
20	CA	13.000	+ -	NR	0.900	+ -	NR	12.000	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.550	+ -	NR	0.050	+ -	NR	0.550	+ -	NR
25	MN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
26	FE	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.550	+ -	NR	0.050	+ -	NR	0.550	+ -	NR
29	CU	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
30	ZN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
34	SE	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
35	BR	0.050	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	0.050	+ -	NR	<	+ -	NR	0.050	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.050	+ -	NR	<	+ -	NR	0.050	+ -	NR
200	TC	1.000	+ -	NR	0.550	+ -	NR	2.000	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	41.000	+ -	NR	57.000	+ -	NR	55.000	+ -	NR
204	NO3	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
205	CO3	<	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		58.200			59.550			72.250		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : '45,34 AND 31% OF FINE,COARSE AND TSP REPORTED TO BE O,NA,MG AND AL.
REF. 10

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
27501	10	GYPSUM CALCINING	N.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N. BRUNETZ," FINE PARTICLE EMISSIONS FROM STATIONARY AND MISCELLANEOUS SOURCES IN THE SOUTH COAST AIR BASIN,"KVB CORP. NO 5806-783(1979). NTIS #PB 293923. ALL PROFILES FROM THIS REFERENCE WERE OBTAINED USING THE EPA SOURCE ASSESSMENT SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1 UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND IMPINGERS OPERATED ISOKINETICALLY. CYCLONE AND FILTER CATCHES WERE ANALYZED BY XRF (ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT BE CONSIDERED QUANTITATIVE. AA WAS OCASSIONALLY USED AS A QA MEASURE. WATER SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE METHOD) AND CARBON (OXIDATION/NDIR DETECTION); CARBONATE AND "VOLATILE" CARBON OXIDIZED AT 150 DEG.C WERE ROUTINE.UNFORTUANTELY, SEVERAL OF THE LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN REPORTED AS A SUM. THIS DOCUMENT IS REPRESENTS A RICH SOURCE OF INFORMATION.	CALCINATION OF GYPSUM IS THE HEATING OF CASO4.2H2O TO PRODUCE ANHYDROUS CALCIUM SULFATE USED IN WALL PLASTER AND OTHER PRODUCTS. GYPSUM IS HEATED IN NATURAL GAS-FIRED ROTARY KILN. RESULTS FROM ONE SAMPLE TAKEN DOWNSTREAM OF A BAGHOUSE. NOTE: ORIGIONAL DATA REPORTED AS TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS (D) (<0.1%). MID-RANGE VALUES OF 0.55 AND 0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES >10,3-10,1-3,<1 UM. TSP PROFILE IS KVB COMPOSITE PROFILE.

13-Jun-85

SOURCE LIBRARY

SOURCE: CAST IRON INDUCTION FURNACE
SCC: 3-04-003-03
CONTROLS: UNSPECIFIED

PROFILE: 28201
RANKING: 1324
RATING : C

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		2.000	+ -	NR
12	MG		+ -			+ -		<	+ -	NR
13	AL		+ -			+ -		1.300	+ -	NR
14	SI		+ -			+ -		2.100	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		<	+ -	NR
17	CL		+ -			+ -		2.500	+ -	NR
19	K		+ -			+ -		3.200	+ -	NR
20	CA		+ -			+ -		1.500	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.480	+ -	NR
23	V		+ -			+ -		0.006	+ -	NR
24	CR		+ -			+ -		0.024	+ -	NR
25	MN		+ -			+ -		1.700	+ -	NR
26	FE		+ -			+ -		5.700	+ -	NR
27	CO		+ -			+ -		0.002	+ -	NR
28	NI		+ -			+ -		0.098	+ -	NR
29	CU		+ -			+ -		0.120	+ -	NR
30	ZN		+ -			+ -		2.900	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.012	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.021	+ -	NR
37	RB		+ -			+ -		0.011	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		0.012	+ -	NR
50	SN		+ -			+ -		<	+ -	NR
51	SB		+ -			+ -		<	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		<	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		0.540	+ -	NR
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			24.226		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 47.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
28201	47	STEEL	TETSUO MAMURO,ARIKA MIZOHATA AND TARAHIDE	GEO. MEAN OF 3 TESTS DURING MELTING,
28201		PRODUCT.	KUBOTA,"ELEMENTAL COMPOSITION OF SUSPENDED	REFINING/DISCHARGE.
28201			PARTICLES RELEASED FFROM IRON AND STEEL	
28201			WORKS," ANNUAL REPORT OF THE RADIATION	
28201			CENTER OF OSAKA PREFECTURE. VOL 20(1979)	
28201				

SOURCE: CAST IRON CUPOLA
SCC: 3-04-003-01
CONTROLS: UNSPECIFIED

PROFILE: 28202
RANKING: 1324
RATING : C

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM +-	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		1.300	+ -	NR
12	MG		+ -			+ -		<	+ -	NR
13	AL		+ -			+ -		1.100	+ -	NR
14	SI		+ -			+ -		24.000	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		2.300	+ -	NR
17	CL		+ -			+ -		0.890	+ -	NR
19	K		+ -			+ -		3.000	+ -	NR
20	CA		+ -			+ -		1.000	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.060	+ -	NR
23	V		+ -			+ -		0.009	+ -	NR
24	CR		+ -			+ -		0.052	+ -	NR
25	MN		+ -			+ -		4.500	+ -	NR
26	FE		+ -			+ -		15.000	+ -	NR
27	CO		+ -			+ -		0.004	+ -	NR
28	NI		+ -			+ -		0.035	+ -	NR
29	CU		+ -			+ -		0.260	+ -	NR
30	ZN		+ -			+ -		0.830	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.013	+ -	NR
34	SE		+ -			+ -		0.002	+ -	NR
35	BR		+ -			+ -		0.009	+ -	NR
37	RB		+ -			+ -		0.022	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		<	+ -	NR
50	SN		+ -			+ -		<	+ -	NR
51	SB		+ -			+ -		0.370	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		<	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		0.230	+ -	NR
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			52.686		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 47.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
28202	47	IRON	TETSUO MAMURO,ARIKA MIZOHATA AND TARAHIDE	CAST IRON CUPOLA . GEO MEAN OF 5 TESTS .
28202		PRODUCT.	KUBOTA,"ELEMENTAL COMPOSITION OF SUSPENDED	XRF AND INAA ANALYSIS. SCRAP IRON,PIG IRON,
28202			PARTICLES RELEASED FFROM IRON AND STEEL	COKE AND LIMESTONE RAW MATERIALS.
28202			WORKS," ANNUAL REPORT OF THE RADIATION	
28202			CENTER OF OSAKA PREFECTURE. VOL 20(1979)	
28202				

SOURCE: STEEL PRODUCTION - STEEL SINTER PLANT
SCC: 3-03-008-03
CONTROLS: BAGHOUSE

PROFILE: 28301
RANKING: 2121
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	6.600	+ -	NR	2.600	+ -	NR	6.330	+ -	NR
17	CL	17.000	+ -	NR	14.000	+ -	NR	28.000	+ -	NR
19	K	20.000	+ -	NR	9.000	+ -	NR	19.000	+ -	NR
20	CA	0.550	+ -	NR	1.000	+ -	NR	0.550	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	0.550	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	3.000	+ -	NR	0.550	+ -	NR	3.000	+ -	NR
25	MN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
26	FE	13.000	+ -	NR	20.000	+ -	NR	14.000	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.550	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	2.000	+ -	NR	2.000	+ -	NR	2.000	+ -	NR
30	ZN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
34	SE	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
35	BR	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
37	RB	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
38	SR	0.050	+ -	NR	<	+ -	NR	0.050	+ -	NR
40	ZR	0.050	+ -	NR	<	+ -	NR	0.050	+ -	NR
47	AG	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
48	CD	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
50	SN	0.050	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	0.050	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	11.000	+ -	NR	13.000	+ -	NR	10.000	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	20.000	+ -	NR	8.000	+ -	NR	19.000	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		91.800			71.500			99.600		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : ABOUT 10% TOTAL CARBON, 5% OTHERS (SI, AL, MG, F). TSP FRACTION.
REF. 10 ABOUT 15% TOTAL CARBON, 40% OTHER (SI, AL, MG, F) FINE FRACTION.

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PROFILE|REFERENCE|SOURCE  |                   REFERENCE                   |REFERENCE ABSTRACT                               |
NUMBER |NUMBER   |GROUP   |                                               |                                                 |
-------------------------------------------------------------------------------------------------------------------------|
 28301 |       10 |SINTER  |H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.   |A 5000 TON/DAY SINTER PLANT RECYCLING            |
 28301 |          |PLANT   |BRUNETZ," FINE PARTICLE EMISSIONS FROM        |IRON-BEARING MATERIALS TO BE ADDED TO THE        |
 28301 |          |        |STATIONARY AND MISCELLANEOUS SOURCES IN THE   |BLAST FURNACE CHARGE. AVERAGE VALUES FOR 2       |
 28301 |          |        |SOUTH COAST AIR BASIN,"KVB CORP. NO           |TESTS TAKEN DOWNSTREAM OF A BAGHOUSE.            |
 28301 |          |        |5806-783(1979).  NTIS #PB 293923.             |                                                 |
 28301 |          |        |                                              |                                                 |
 28301 |          |        |ALL PROFILES FROM THIS REFERENCE WERE         |NOTE: ORIGIONAL DATA REPORTED AS                 |
 28301 |          |        |OBTAINED USING THE EPA SOURCE ASSESSMENT      |TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS     |
 28301 |          |        |SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A  |(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND        |
 28301 |          |        |HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1  |0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS      |
 28301 |          |        |UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND  |DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE    |
 28301 |          |        |IMPINGERS OPERATED ISOKINETICALLY. CYCLONE    |ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES      |
 28301 |          |        |AND FILTER CATCHES WERE ANALYZED BY XRF       | >10,3-10,1-3,<1 UM. TSP PROFILE IS KVB          |
 28301 |          |        |(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE  |COMPOSITE PROFILE.                               |
 28301 |          |        |OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT  |                                                 |
 28301 |          |        |BE CONSIDERED QUANTITATIVE.  AA WAS           |                                                 |
 28301 |          |        |OCASSIONALLY USED AS A QA MEASURE. WATER      |                                                 |
 28301 |          |        |SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE      |                                                 |
 28301 |          |        |METHOD) AND CARBON (OXIDATION/NDIR            |                                                 |
 28301 |          |        |DETECTION); CARBONATE AND "VOLATILE" CARBON   |                                                 |
 28301 |          |        |OXIDIZED AT 150 DEG.C WERE                    |                                                 |
 28301 |          |        |ROUTINE.UNFORTUANTELY, SEVERAL OF THE         |                                                 |
 28301 |          |        |LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN      |                                                 |
 28301 |          |        |REPORTED AS A SUM. THIS DOCUMENT IS           |                                                 |
 28301 |          |        |REPRESENTS A RICH SOURCE OF INFORMATION.      |                                                 |
 28301 |          |        |                                              |                                                 |
```

SOURCE: STEEL PRODUCTION - OPEN HEARTH FURNANCE
SCC: 3-03-009-01
CONTROLS: ESP

PROFILE: 28302
RANKING: 2121
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	13.300	+ -	NR	3.000	+ -	NR	13.300	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	5.000	+ -	NR	5.000	+ -	NR	5.000	+ -	NR
20	CA	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
24	CR	2.000	+ -	NR	0.550	+ -	NR	2.000	+ -	NR
25	MN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
26	FE	11.000	+ -	NR	16.000	+ -	NR	11.000	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
29	CU	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	<	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
37	RB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
48	CD	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
50	SN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
51	SB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	40.000	+ -	NR	35.000	+ -	NR	40.000	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		62.200			60.750			62.200		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : 20% CARBON, 22-26% OTHER (SI, OZ, AL, MG) TSP AND COARSE. REF. 20

SOURCE: STEEL PRODUCTION - OPEN HEARTH FURNANCE
SCC: 3-03-009-01
CONTROLS: ESP

PROFILE: 28302
RANKING: 2121
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	13.300	+ -	NR	3.000	+ -	NR	13.300	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	5.000	+ -	NR	5.000	+ -	NR	5.000	+ -	NR
20	CA	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
24	CR	2.000	+ -	NR	0.550	+ -	NR	2.000	+ -	NR
25	MN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
26	FE	11.000	+ -	NR	16.000	+ -	NR	11.000	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
29	CU	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	<	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
37	RB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
48	CD	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
50	SN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
51	SB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	40.000	+ -	NR	35.000	+ -	NR	40.000	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		62.200			60.750			62.200		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : 20% CARBON, 22-26% OTHER (SI, OZ, AL, MG) TSP AND COARSE. REF. 10

13-Jun-85 SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
28302	10	OPEN	H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.	OXYGEN LANCE OPEN HEARTH FURNACE. S
28302		HEARTH	BRUNETZ," FINE PARTICLE EMISSIONS FROM	ESTIMATED AS 1/3 OF SO4. SCRAP IRON STEEL
28302		FURNACE	STATIONARY AND MISCELLANEOUS SOURCES IN THE	AND PIG IRON ARE HEATED IN A SHALLOW
28302			SOUTH COAST AIR BASIN,"KVB CORP. NO	OIL-FIRED HEARTH . FLOURINE -BEARING ORES
28302			5806-783(1979). NTIS #PB 293923.	ARE USED IN THE CHARGE. AVERAGE OF 2 TESTS
28302				TAKEN DOWNSTREAM OF AN ESP.
28302			ALL PROFILES FROM THIS REFERENCE WERE	
28302			OBTAINED USING THE EPA SOURCE ASSESSMENT	
28302			SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A	NOTE: ORIGIONAL DATA REPORTED AS
28302			HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1	TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS
28302			UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND	(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND
28302			IMPINGERS OPERATED ISOKINETICALLY. CYCLONE	0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS
28302			AND FILTER CATCHES WERE ANALYZED BY XRF	DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE
28302			(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE	ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES
28302			OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT	>10,3-10,1-3,<1 UM. TSP PROFILE IS KVB
28302			BE CONSIDERED QUANTITATIVE. AA WAS	COMPOSITE PROFILE.
28302			OCASSIONALLY USED AS A QA MEASURE. WATER	
28302			SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE	
28302			METHOD) AND CARBON (OXIDATION/NDIR	
28302			DETECTION); CARBONATE AND "VOLATILE" CARBON	
28302			OXIDIZED AT 150 DEG.C WERE	
28302			ROUTINE.UNFORTUANTELY, SEVERAL OF THE	
28302			LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN	
28302			REPORTED AS A SUM. THIS DOCUMENT IS	
28302			REPRESENTS A RICH SOURCE OF INFORMATION.	
28302				

13-Jun-85 SOURCE LIBRARY

SOURCE: STEEL PRODUCTION - BASIC OXYGEN FURNANCE
SCC: 3-03-009-03
CONTROLS: ESP

PROFILE: 28303
RANKING: 2231
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
14	SI	9.900	+ -	NR	9.900	+ -	NR	9.900	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	13.330	+ -	NR	13.330	+ -	NR	13.330	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	5.000	+ -	NR	5.000	+ -	NR	5.000	+ -	NR
20	CA	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
24	CR	2.000	+ -	NR	2.000	+ -	NR	2.000	+ -	NR
25	MN	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
26	FE	11.000	+ -	NR	11.000	+ -	NR	11.000	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
29	CU	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	<	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
37	RB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
48	CD	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
50	SN	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
51	SB	0.050	+ -	NR	0.050	+ -	NR	0.050	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
201	OC	20.000	+ -	NR	20.000	+ -	NR	20.000	+ -	NR
202	EC	<	+ -	NR	<	+ -	NR	<	+ -	NR
203	SO4	40.000	+ -	NR	40.000	+ -	NR	40.000	+ -	NR
204	NO3	0.550	+ -	NR	0.550	+ -	NR	0.550	+ -	NR
SUM(%)		92.100			92.100			92.100		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : ALL SIZE FRACTIONS PROFILES ASSUMED SIMILAR. REF. 10, APPENDIX A.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
28303	10	STEEL BOF	H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.	BOF FURNACE . S ESTIMATED AS 1/3 OF SO4.
28303		FURNACE	BRUNETZ," FINE PARTICLE EMISSIONS FROM	COMPOSITION OF ALL 3 FRACTIONS ASSUMED
28303			STATIONARY AND MISCELLANEOUS SOURCES IN THE	SIMILAR BASED ON SIZE DISTRIBUTION.
28303			SOUTH COAST AIR BASIN,"KVB CORP. NO	
28303			5806-783(1979). NTIS #PB 293923.	
28303				
28303			ALL PROFILES FROM THIS REFERENCE WERE	NOTE: ORIGIONAL DATA REPORTED AS
28303			OBTAINED USING THE EPA SOURCE ASSESSMENT	TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS
28303			SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A	(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND
28303			HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1	0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS
28303			UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND	DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE
28303			IMPINGERS OPERATED ISOKINETICALLY. CYCLONE	ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES
28303			AND FILTER CATCHES WERE ANALYZED BY XRF	>10,3-10,1-3,<1 UM. TSP PROFILE IS KVB
28303			(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE	COMPOSITE PROFILE.
28303			OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT	
28303			BE CONSIDERED QUANTITATIVE. AA WAS	
28303			OCASSIONALLY USED AS A QA MEASURE. WATER	
28303			SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE	
28303			METHOD) AND CARBON (OXIDATION/NDIR	
28303			DETECTION); CARBONATE AND "VOLATILE" CARBON	
28303			OXIDIZED AT 150 DEG.C WERE	
28303			ROUTINE.UNFORTUANTELY, SEVERAL OF THE	
28303			LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN	
28303			REPORTED AS A SUM. THIS DOCUMENT IS	
28303			REPRESENTS A RICH SOURCE OF INFORMATION.	
28303				

SOURCE: STEEL ELECTRIC ARC FURNACE
SCC: 3-04-007-01
CONTROLS: BAGHOUSE

PROFILE: 28304
RANKING: 3324
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	0.500	NA	+ -	0.500		+ -	
11	NA	1.260	+ -	0.480	1.260	+ -	0.480		+ -	
12	MG	6.500	+ -	0.710	6.500	+ -	0.710		+ -	
13	AL	0.650	+ -	0.160	0.650	+ -	0.160		+ -	
14	SI	5.000	+ -	0.210	5.000	+ -	0.210		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	1.960	+ -	0.070	1.950	+ -	0.070		+ -	
17	CL	1.850	+ -	0.780	1.850	+ -	0.780		+ -	
19	K	0.920	+ -	0.070	0.920	+ -	0.070		+ -	
20	CA	6.200	+ -	0.570	6.200	+ -	0.570		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.200	+ -	0.020	0.200	+ -	0.020		+ -	
23	V	0.060	+ -	0.010	0.060	+ -	0.010		+ -	
24	CR	2.100	+ -	1.400	2.100	+ -	1.400		+ -	
25	MN	8.700	+ -	0.900	8.700	+ -	0.900		+ -	
26	FE	32.000	+ -	3.000	32.000	+ -	3.000		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.700	+ -	0.070	0.700	+ -	0.070		+ -	
29	CU	0.280	+ -	0.030	0.280	+ -	0.030		+ -	
30	ZN	1.200	+ -	0.120	1.200	+ -	0.120		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.760	+ -	0.070	0.760	+ -	0.070		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	2.500	+ -	1.300	2.500	+ -	1.300		+ -	
204	NO3	NA	+ -	1.400	NA	+ -	1.400		+ -	
SUM(%)		72.840			72.830			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
28304	46	STEEL-	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	AVERAGE OF TWO SAMPLES COLLECTED FROM A
28304		ELECTRIC	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	STEEL ELECTRIC ARC FURNACE BAGHOUSE
28304		ARC FUR-	FINE AND TOTAL SUSPENDED PARTICULATE MATTER	EMISSIONS.
28304		NACE	IN PORTLAND,OREGON," PHD THESIS. OREGON	
28304			GRADUATE CENTER(1979)	
28304				
28304				PROFILES DEVELOPED DURING THE PACS STUDY
28304				WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
28304				(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
28304				NO DILUTION AIR. UPPER CUT POINT ABOUT 20
28304				UM, D50. ANALYSIS BY XRF AND INNA, IC AND
28304				CARBON OXIDATION(CORRECTED FOR ARTIFACT EC).
28304				SINCE NO DILUTION AIR WAS USED DURING
28304				SAMPLING, THE PACS PROFILES TEND TO
28304				UNDERESTIMATE ORGANIC CARBON.
28304				

SOURCE: FERROMANGANESE FURNACE
SCC: 3-03-007-01
CONTROLS: BAGHOUSE

PROFILE: 28401
RANKING: 2324
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	0.290	+ -	0.080	0.290	+ -	0.080		+ -	
11	NA	3.100	+ -	0.300	3.100	+ -	0.300		+ -	
12	MG	<	+ -	4.000	<	+ -	4.000		+ -	
13	AL	0.640	+ -	0.130	0.640	+ -	0.130		+ -	
14	SI	0.990	+ -	0.300	0.990	+ -	0.300		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	1.700	+ -	0.350	1.700	+ -	0.350		+ -	
17	CL	0.420	+ -	0.160	0.420	+ -	0.160		+ -	
19	K	10.500	+ -	3.900	10.500	+ -	3.900		+ -	
20	CA	1.300	+ -	0.140	1.300	+ -	0.140		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.046	+ -	0.007	0.046	+ -	0.007		+ -	
23	V	0.024	+ -	0.019	0.024	+ -	0.019		+ -	
24	CR	0.042	+ -	0.003	0.042	+ -	0.003		+ -	
25	MN	17.300	+ -	0.990	17.300	+ -	0.990		+ -	
26	FE	2.100	+ -	1.400	2.100	+ -	1.400		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	0.005	<	+ -	0.005		+ -	
29	CU	0.036	+ -	0.004	0.036	+ -	0.004		+ -	
30	ZN	0.580	+ -	0.250	0.580	+ -	0.250		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.160	+ -	0.220	0.160	+ -	0.220		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.045	+ -	0.016	0.045	+ -	0.016		+ -	
201	OC	9.000	+ -	0.090	9.000	+ -	0.090		+ -	
202	EC	1.500	+ -	0.150	1.500	+ -	0.150		+ -	
203	SO4	4.200	+ -	0.400	4.200	+ -	0.400		+ -	
204	NO3	5.700	+ -	2.800	5.700	+ -	2.800		+ -	
SUM(%)		59.673			59.673			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
28401	46	FERROMAN-	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	AVERAGE OF TWO SAMPLES FROM ONE SOURCE.
28401		GANESE -	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	
28401		FURNACE	FINE AND TOTAL SUSPENDED PARTICULATE MATTER	
28401			IN PORTLAND,OREGON," PHD THESIS. OREGON	
28401			GRADUATE CENTER(1979)	
28401				
28401				PROFILES DEVELOPED DURING THE PACS STUDY
28401				WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
28401				(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
28401				NO DILUTION AIR. UPPER CUT POINT ABOUT 20
28401				UM, D50. ANALYSIS BY XRF AND INNA, IC AND
28401				CARBON OXIDATION(CORRECTED FOR ARTIFACT EC).
28401				SINCE NO DILUTION AIR WAS USED DURING
28401				SAMPLING, THE PACS PROFILES TEND TO
28401				UNDERESTIMATE ORGANIC CARBON.
28401				

SOURCE: STEEL FOUNDRY - STEEL HEAT TREATING (SALT QUENCH)
SCC: 3-04-007-04
CONTROLS: NONE

PROFILE: 28601
RANKING: 2221
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		NR	+ -	NR
12	MG		+ -			+ -		NR	+ -	NR
13	AL		+ -			+ -		NR	+ -	NR
14	SI		+ -			+ -		<	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		<	+ -	NR
17	CL		+ -			+ -		30.000	+ -	NR
19	K		+ -			+ -		4.000	+ -	NR
20	CA		+ -			+ -		0.550	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		<	+ -	NR
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		0.550	+ -	NR
25	MN		+ -			+ -		<	+ -	NR
26	FE		+ -			+ -		9.000	+ -	NR
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		2.000	+ -	NR
29	CU		+ -			+ -		0.050	+ -	NR
30	ZN		+ -			+ -		0.050	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		<	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.050	+ -	NR
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		0.050	+ -	NR
50	SN		+ -			+ -		<	+ -	NR
51	SB		+ -			+ -		<	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		0.550	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		0.050	+ -	NR
201	OC		+ -			+ -		6.000	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		32.000	+ -	NR
204	NO3		+ -			+ -		0.550	+ -	NR
SUM(%)		0.000			0.000			85.450		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : ABOUT 16% NA, SI, O. REF 10.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
28601	10	STEEL	H.J. TABACK, A.R. BRIENZA,J.F. MACKO AND N.	STEEL HEATING TREATING PROCESS EMISSIONS AT
28601		TREATING	BRUNETZ," FINE PARTICLE EMISSIONS FROM	OUTLET OF A BAGHOUSE. PROCESS INVOLVES
28601			STATIONARY AND MISCELLANEOUS SOURCES IN THE	DIPPING HEATED STEEL IN TANKS OF LIQUID SALT
28601			SOUTH COAST AIR BASIN,"KVB CORP. NO	AT 1620 DEG. F. AND WATER QUENCHING.
28601			5806-783(1979). NTIS #PB 293923.	AVERAGE VALUES FFROM 2 TESTS . NO CONTROL
28601				SYSTEM
28601			ALL PROFILES FROM THIS REFERENCE WERE	
28601			OBTAINED USING THE EPA SOURCE ASSESSMENT	NOTE: ORIGIONAL DATA REPORTED AS
28601			SAMPLING SYSTEM (SASS) TRAIN EQUIPPED WITH A	TRACE(T)(0.1-1.0%) OR BELOW DETECTION LIMITS
28601			HEATED METHOD 5 PROBE,3 CYCLONES (10,3 AND 1	(D) (<0.1%). MID-RANGE VALUES OF 0.55 AND
28601			UM D50) AT 400 DEG. F. MILLIPORE FILTERS AND	0.05% RESPECTIVELY WERE SUBSTITUTED IN THIS
28601			IMPINGERS OPERATED ISOKINETICALLY. CYCLONE	DOCUMENT FOR ALL PROFILES FROM THIS REFERENCE
28601			AND FILTER CATCHES WERE ANALYZED BY XRF	ORIGIONAL DATA REPORTED IN FOUR SIZE RANGES
28601			(ELEMENTS) > AT. NO. 19 (K). SI,P AND S WERE	>10,3-10,1-3,<1 UM. TSP PROFILE IS KVB
28601			OCASSIONALLY REPORTED BUT RESULTS SHOULD NOT	COMPOSITE PROFILE.
28601			BE CONSIDERED QUANTITATIVE. AA WAS	
28601			OCASSIONALLY USED AS A QA MEASURE. WATER	
28601			SOLUBLE SO4(MTB METHOD) , NO3 (DIAZO DYE	
28601			METHOD) AND CARBON (OXIDATION/NDIR	
28601			DETECTION); CARBONATE AND "VOLATILE" CARBON	
28601			OXIDIZED AT 150 DEG.C WERE	
28601			ROUTINE.UNFORTUANTELY, SEVERAL OF THE	
28601			LIGHTER ELEMENTS (AL,SI,MG,O) WERE OFTEN	
28601			REPORTED AS A SUM. THIS DOCUMENT IS	
28601			REPRESENTS A RICH SOURCE OF INFORMATION.	
28601				

13-Jun-85

SOURCE LIBRARY

SOURCE: ALUMINUM PROCESSING
SCC: 3-03-001-07
CONTROLS: BAGHOUSE

PROFILE: 29101
RANKING: 2324
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM			COARSE 2.5-10UM			TSP <30 UM		
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	6.000	+ -	2.300	4.200	+ -	1.900		+ -	
11	NA	4.100	+ -	1.700	2.400	+ -	0.600		+ -	
12	MG	2.800	+ -	1.800	2.700	+ -	0.550		+ -	
13	AL	27.000	+ -	8.000	31.300	+ -	4.900		+ -	
14	SI	0.340	+ -	0.340	0.097	+ -	0.080		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	1.400	+ -	0.200	<	+ -	0.300		+ -	
17	CL	1.330	+ -	0.840	1.200	+ -	0.150		+ -	
19	K	0.220	+ -	0.060	<	+ -	0.100		+ -	
20	CA	0.330	+ -	0.030	0.810	+ -	0.340		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.040	+ -	0.030	0.076	+ -	0.041		+ -	
23	V	0.064	+ -	0.036	0.040	+ -	0.011		+ -	
24	CR	<	+ -	0.010	0.016	+ -	0.018		+ -	
25	MN	0.011	+ -	0.008	<	+ -	0.020		+ -	
26	FE	0.450	+ -	0.290	0.380	+ -	0.150		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.190	+ -	0.085	0.210	+ -	0.060		+ -	
29	CU	0.044	+ -	0.007	0.140	+ -	0.040		+ -	
30	ZN	0.015	+ -	0.011	0.009	+ -	0.004		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.037	+ -	0.054	0.120	+ -	0.200		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.012	+ -	0.010	<	+ -	0.100		+ -	
201	OC	3.900	+ -	3.900	<	+ -	2.000		+ -	
202	EC	2.300	+ -	1.000	1.600	+ -	1.500		+ -	
203	SO4	4.400	+ -	3.900	1.700	+ -	1.100		+ -	
204	NO3	0.410	+ -	0.180	NA	+ -	2.000		+ -	
SUM(%)		55.393			46.998			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46. EC,OC DATA UPDATED BY SHAH, REF. 54.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29101	46,54	ALUMINUM	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	ALUMINUM REDUCTION EMISSIONS VENTED THROUGH
29101		PROCESS-	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	STACK DOWNSTREAM OF BAGHOUSE. AVERAGE OF 3
29101		ING	FINE AND TOTAL SUSPENDED PARTICULATE MATTER	SAMPLES TAKEN AT TWO PLANTS.
29101			IN PORTLAND,OREGON," PHD THESIS. OREGON	
29101			GRADUATE CENTER(1979)	
29101			AND	
29101			JITENDRA J. SHAH,"MEASUREMENTS OF	PROFILES DEVELOPED DURING THE PACS STUDY
29101			CARBONACEOUS AEROSOLS ACROSS THE US:SOURCES	WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
29101			AND ROLE IN VISIBILITY DEGREDATION," PHD	(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
29101			THESIS, OREGON GRADUATE CENTER. 1981.	NO DILUTION AIR. UPPER CUT POINT ABOUT 20
29101			TABLE A.2.	UM, D50. ANALYSIS BY XRF AND INNA, IC AND
29101				CARBON OXIDATION(CORRECTED FOR ARTIFACT EC).
29101				SINCE NO DILUTION AIR WAS USED DURING
29101				SAMPLING, THE PACS PROFILES TEND TO
29101				UNDERESTIMATE ORGANIC CARBON.
29101				

SOURCE: ALUMINUM REDUCTION POTLINE
SCC: 3-03-001-07
CONTROLS: NONE

PROFILE: 29102
RANKING: 3324
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	<	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	0.190	+ -	0.020	NA	+ -	NR	NA	+ -	NR
9	F	13.500	+ -	5.900	NA	+ -	NR	15.454	+ -	3.387
11	NA	14.900	+ -	1.700	NA	+ -	NR	NA	+ -	NR
12	MG	0.055	+ -	0.006	NA	+ -	NR	NA	+ -	NR
13	AL	15.200	+ -	1.700	NA	+ -	NR	15.926	+ -	1.657
14	SI	0.340	+ -	0.040	NA	+ -	NR	0.398	+ -	0.047
15	P	0.030	+ -	0.030	NA	+ -	NR	0.042	+ -	0.019
16	S	5.000	+ -	3.800	NA	+ -	NR	3.908	+ -	2.065
17	CL	0.800	+ -	0.160	NA	+ -	NR	0.834	+ -	0.338
19	K	0.527	+ -	0.470	NA	+ -	NR	0.358	+ -	0.254
20	CA	0.100	+ -	0.140	NA	+ -	NR	0.414	+ -	0.083
22	TI	0.002	+ -	NR	NA	+ -	NR	0.015	+ -	0.002
23	V	0.015	+ -	0.004	NA	+ -	NR	0.073	+ -	0.013
25	MN	0.008	+ -	0.011	NA	+ -	NR	0.004	+ -	0.006
26	FE	0.114	+ -	0.095	NA	+ -	NR	0.812	+ -	0.281
27	CO	0.002	+ -	0.002	NA	+ -	NR	NA	+ -	NR
28	NI	0.014	+ -	0.008	NA	+ -	NR	0.288	+ -	0.078
29	CU	0.018	+ -	0.008	NA	+ -	NR	0.078	+ -	0.011
30	ZN	0.007	+ -	0.001	NA	+ -	NR	0.006	+ -	0.003
31	GA	0.028	+ -	0.018	NA	+ -	NR	0.050	+ -	0.014
33	AS	0.022	+ -	0.014	NA	+ -	NR	0.018	+ -	0.008
34	SE	0.003	+ -	NR	NA	+ -	NR	0.002	+ -	NR
35	BR	0.022	+ -	0.008	NA	+ -	NR	0.016	+ -	0.004
37	RB	0.005	+ -	0.001	NA	+ -	NR	0.004	+ -	NR
38	SR	<	+ -	NR	NA	+ -	NR	0.003	+ -	NR
40	ZR	<	+ -	NR	NA	+ -	NR	<	+ -	NR
42	MO	0.006	+ -	0.006	NA	+ -	NR	0.012	+ -	0.005
46	PD	<	+ -	NR	NA	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	NA	+ -	NR	<	+ -	NR
48	CD	0.003	+ -	0.001	NA	+ -	NR	0.002	+ -	0.001
49	IN	<	+ -	NR	NA	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	NA	+ -	NR	<	+ -	NR
51	SB	0.001	+ -	0.003	NA	+ -	NR	0.001	+ -	0.002
56	BA	0.001	+ -	NR	NA	+ -	NR	0.002	+ -	0.001
57	LA	0.004	+ -	0.004	NA	+ -	NR	0.004	+ -	0.003
80	HG	<	+ -	NR	NA	+ -	NR	<	+ -	NR
82	PB	0.072	+ -	0.026	NA	+ -	NR	0.053	+ -	0.014
83	BI	0.030	+ -	0.030	NA	+ -	NR	NA	+ -	NR
200	TC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
201	OC	28.200	+ -	5.000	NA	+ -	NR	22.180	+ -	3.032
202	EC	2.680	+ -	0.320	NA	+ -	NR	15.247	+ -	2.765
203	SO4	17.411	+ -	9.300	NA	+ -	NR	12.764	+ -	5.043
204	NO3	0.690	+ -	0.130	NA	+ -	NR	0.593	+ -	0.086
SUM(%)		100.000			0.000			89.561		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 49. FINE FRACTION CORRECTED BY 8% TO NORMALIZE TO 100%

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29102	49	ALUMINUM	J.A. COOPER, C.FRAZIER AND J.E. HOUCH,	AVERAGE OF TWO REPLICATE SAMPLES FROM ROOF
29102		REDUCTION	SEATTLE-TACOMA AEROSOL CHARACTERIZATION	VENTS ABOVE ALUMINUM REDUCTION POTLINES.
29102		POTLINE	STUDY" DRAFT FINAL REPORT TO THE PUGET	THERE WERE NO CONTROLS. SAMPLES WERE
29102			SOUND AIR POLLUTION CONTROL AGENCY. NEA,INC.	COLLECTED WITH A TWO-STAGE VIRTUAL IMPACTOR.
29102			1983.	
29102				

SOURCE: PRIMARY COPPER SMELTER
SCC: 3-03-005-03
CONTROLS: ESP

PROFILE: 29202
RANKING: 2121
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	0.007	+ -	NR		+ -			+ -	
5	B	<	+ -	NR		+ -			+ -	
9	F	4.950	+ -	NR		+ -			+ -	
11	NA	<	+ -	NR		+ -			+ -	
12	MG	<	+ -	NR		+ -			+ -	
13	AL	<	+ -	NR		+ -			+ -	
14	SI	<	+ -	NR		+ -			+ -	
15	P	<	+ -	NR		+ -			+ -	
16	S	0.792	+ -	NR		+ -			+ -	
17	CL	<	+ -	NR		+ -			+ -	
19	K	<	+ -	NR		+ -			+ -	
20	CA	<	+ -	NR		+ -			+ -	
21	SC	<	+ -	NR		+ -			+ -	
22	TI	<	+ -	NR		+ -			+ -	
23	V	<	+ -	NR		+ -			+ -	
24	CR	0.007	+ -	NR		+ -			+ -	
25	MN	<	+ -	NR		+ -			+ -	
26	FE	<	+ -	NR		+ -			+ -	
27	CO	<	+ -	NR		+ -			+ -	
28	NI	0.056	+ -	NR		+ -			+ -	
29	CU	0.660	+ -	NR		+ -			+ -	
30	ZN	0.047	+ -	NR		+ -			+ -	
31	GA	<	+ -	NR		+ -			+ -	
32	GE	<	+ -	NR		+ -			+ -	
33	AS	92.449	+ -	NR		+ -			+ -	
34	SE	0.640	+ -	NR		+ -			+ -	
35	BR	<	+ -	NR		+ -			+ -	
37	RB	<	+ -	NR		+ -			+ -	
38	SR	<	+ -	NR		+ -			+ -	
40	ZR	<	+ -	NR		+ -			+ -	
47	AG	<	+ -	NR		+ -			+ -	
48	CD	0.010	+ -	NR		+ -			+ -	
50	SN	<	+ -	NR		+ -			+ -	
51	SB	0.217	+ -	NR		+ -			+ -	
55	CS	<	+ -	NR		+ -			+ -	
56	BA	<	+ -	NR		+ -			+ -	
58	CE	<	+ -	NR		+ -			+ -	
80	HG	<	+ -	NR		+ -			+ -	
82	PB	0.049	+ -	NR		+ -			+ -	
201	OC	NA	+ -	NR		+ -			+ -	
202	EC	NA	+ -	NR		+ -			+ -	
203	SO4	NA	+ -	NR		+ -			+ -	
204	NO3	NA	+ -	NR		+ -			+ -	
SUM(%)		99.884			0.000			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 24

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29202	24	COPPER	K. SCHWITZGEBEL, R. COLEMAN, R. COLLINS, R.	PROFILE OF EMISSIONS DOWNSTREAM OF AN ESP
29202		SMELTER	MANN AND C. THOMPSON,"TRACE ELEMENT STUDY AT	CONTROLLING REVERB FURNACE EMISSIONS ON A
29202			A PRIMARY COPPER SMELTER," US EPA #	200 TON/DAY 25 YEAR OLD SMELTER . SAMPLES
29202			600/2-78-065A (1978).	OBTAINED ISOKINETICALLY WITH SPECIAL TRAIN.
29202				ANALYZED BY XRF/SSMS. 1-2 SAMPLES.
29202				

SOURCE: COPPER OXIDE KILN
SCC: 3-04-999-99
CONTROLS: WET SCRUBBER

PROFILE: 29203
RANKING: 3321
RATING : C

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE +-	FINE UNC	COARSE 2.5-10UM % BY WT	COARSE +-	COARSE UNC	TSP <30 UM % BY WT	TSP +-	TSP UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		NA	+ -	NR
12	MG		+ -			+ -		NA	+ -	NR
13	AL		+ -			+ -		0.347	+ -	0.035
14	SI		+ -			+ -		0.362	+ -	0.036
15	P		+ -			+ -		0.193	+ -	0.019
16	S		+ -			+ -		4.488	+ -	0.449
17	CL		+ -			+ -		2.116	+ -	0.212
19	K		+ -			+ -		0.211	+ -	0.021
20	CA		+ -			+ -		0.750	+ -	0.100
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.018	+ -	NR
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		0.014	+ -	NR
25	MN		+ -			+ -		<	+ -	NR
26	FE		+ -			+ -		0.100	+ -	0.100
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.203	+ -	0.020
29	CU		+ -			+ -		54.151	+ -	5.415
30	ZN		+ -			+ -		0.127	+ -	0.039
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		<	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.018	+ -	NR
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		0.011	+ -	NR
46	PD		+ -			+ -		0.011	+ -	NR
48	CD		+ -			+ -		0.088	+ -	0.016
49	IN		+ -			+ -		<	+ -	NR
50	SN		+ -			+ -		<	+ -	0.018
51	SB		+ -			+ -		<	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		0.013	+ -	0.083
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		0.234	+ -	0.023
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			63.455		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : PRODUCTION OF COPPER OXIDE FROM METALLIC COPPER AND COPPER OXIDE MIXTURES - WET SCRUBBER. REF. 44.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29203	43	COPPER	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	STACK EMISSIONS FOR A COPPER OXIDE KILN.
29203		OXIDE	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	COPPER OXIDE PRODUCED FROM METALLIC COPPER
29203		KILN	THE STATE OF MONTANA. NEA, INC.(1982)	AND COPPER OXIDE MIXTURES. WET SCRUBBER
29203				ABATEMENT SYSTEM. SAMPLES COLLECTED FROM
29203				PLUME LEVEL WITH TOP OF STACK, WITH A
29203				HIGH-VOLUME SAMPLING SYSTEM.
29203				

SOURCE: PRIMARY LEAD SMELTING - SLAG POURING
SCC: 3-03-010-21
CONTROLS: NONE

PROFILE: 29301
RANKING: 3321
RATING : C

SPECIES	SPECIES	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
NUMBER	NAME	% BY WT	+-	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		NA	+ -	NR
9	F		+ -			+ -		NA	+ -	NR
11	NA		+ -			+ -		NA	+ -	NR
12	MG		+ -			+ -		NA	+ -	NR
13	AL		+ -			+ -		0.420	+ -	0.100
14	SI		+ -			+ -		1.900	+ -	0.500
15	P		+ -			+ -		0.266	+ -	0.027
16	S		+ -			+ -		5.523	+ -	0.552
17	CL		+ -			+ -		0.090	+ -	0.020
19	K		+ -			+ -		4.174	+ -	0.417
20	CA		+ -			+ -		2.600	+ -	0.400
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.104	+ -	0.010
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		0.020	+ -	NR
25	MN		+ -			+ -		0.100	+ -	0.030
26	FE		+ -			+ -		3.735	+ -	0.373
27	CO		+ -			+ -		<	+ -	N3
28	NI		+ -			+ -		0.066	+ -	<
29	CU		+ -			+ -		0.375	+ -	0.037
30	ZN		+ -			+ -		32.477	+ -	3.248
31	GA		+ -			+ -		<	+ -	<
32	GE		+ -			+ -		<	+ -	<
33	AS		+ -			+ -		5.196	+ -	0.520
34	SE		+ -			+ -		0.208	+ -	0.121
35	BR		+ -			+ -		<	+ -	<
37	RB		+ -			+ -		<	+ -	<
38	SR		+ -			+ -		0.052	+ -	<
47	AG		+ -			+ -		0.130	+ -	0.019
48	CD		+ -			+ -		0.159	+ -	0.024
49	IN		+ -			+ -		0.011	+ -	<
50	SN		+ -			+ -		3.849	+ -	0.385
51	SB		+ -			+ -		1.626	+ -	0.163
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		<	+ -	0.102
58	CE		+ -			+ -		<	+ -	
80	HG		+ -			+ -		0.092	+ -	0.011
82	PB		+ -			+ -		3.156	+ -	0.316
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			66.329		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : MOLTEN SLAG POURING FUGITIVES. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29301	43	SLAG	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	FUGITIVE EMISSIONS FROM PRIMARY LEAD
29301		POURING	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	SMELTING SLAG POURING. SLAG WAS DEZINCED BY
29301			THE STATE OF MONTANA. NEA, INC.(1982)	FUMING BEFORE PORRING. SAMPLE COLLECTED
29301				WITH MODIFIED HIGH VOLUME SAMPLE. SAMPLE IS
29301				COMPOSITE OF SHORT EPISODIC EMISSIONS FROM
29301				MANY POURS.
29301				

SOURCE: PRIMARY LEAD SMELTING-BLAST FURNANCE
SCC: 3-03-010-02
CONTROLS: BAGHOUSE

PROFILE: 29302
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.100	+ -	0.100	0.100	+--	0.100	0.100	+ -	0.071
14	SI	0.200	+ -	0.200	0.200	+ -	0.200	0.200	+ -	0.141
15	P	0.764	+ -	0.076	0.730	+ -	0.073	0.758	+ -	0.076
16	S	13.269	+ -	1.446	13.189	+ -	1.607	13.255	+ -	1.325
17	CL	5.000	+ -	0.800	4.700	+ -	0.500	4.949	+ -	0.495
19	K	2.075	+ -	0.207	2.179	+ -	0.218	2.093	+ -	0.209
20	CA	0.550	+ -	0.055	0.540	+ -	0.070	0.548	+ -	0.055
22	TI	0.027	+ -	NR	0.038	+ -	NR	0.029	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.020	+ -	NR	0.031	+ -	NR	0.022	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	0.131	+ -	0.013	0.163	+ -	0.021	0.136	+ -	0.014
28	NI	0.060	+ -	NR	0.055	+ -	NR	0.059	+ -	NR
29	CU	0.354	+ -	0.035	0.355	+ -	0.035	0.354	+ -	0.035
30	ZN	15.217	+ -	1.522	14.917	+ -	1.492	15.166	+ -	1.517
33	AS	3.047	+ -	0.305	3.347	+ -	0.335	3.098	+ -	0.310
34	SE	0.037	+ -	NR	0.018	+ -	NR	0.034	+ -	NR
35	BR	0.130	+ -	0.030	0.120	+ -	0.020	0.128	+ -	0.018
38	SR	<	+ -	NR	<	+ -	0.011	<	+ -	NR
46	PD	0.201	+ -	0.020	0.025	+ -	0.024	0.171	+ -	0.017
47	AG	0.166	+ -	0.017	0.146	+ -	0.040	0.163	+ -	0.021
48	CD	23.503	+ -	2.350	21.308	+ -	2.131	23.130	+ -	2.313
49	IN	0.015	+ -	NR	0.050	+ -	NR	0.021	+ -	NR
50	SB	0.501	+ -	0.050	0.482	+ -	0.081	0.498	+ -	0.050
51	SN	0.137	+ -	0.065	0.059	+ -	0.151	0.124	+ -	0.082
56	BA	0.178	+ -	0.066	0.216	+ -	0.308	0.184	+ -	0.157
80	HG	0.022	+ -	0.013	0.025	+ -	0.020	0.022	+ -	0.012
82	PB	30.867	+ -	3.087	29.683	+ -	2.968	30.666	+ -	3.067
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		96.571			92.676			95.908		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : BLAST FURNACE BAGHOUSE EMISSIONS
COARSE FRACTION 2.5-7 UM, D50. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29302	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	PRIMARY LEAD SMELTING BLAST FURNACE STACK.
29302		SMELTING	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	BAGHOUSE CONTROL SYSTEM. SAMPLES COLLECTED
29302		- BLAST	THE STATE OF MONTANA. NEA, INC.(1982)	WITH A DILUTION SAMPLER.
29302		FURNACE		
29302				

SOURCE: PRIMARY LEAD SMELTING-ZINC FUMING
SCC: 3-03-010-08
CONTROLS: BAGHOUSE

PROFILE: 29303
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.500	+ -	0.100	0.300	+ -	0.100	0.450	+ -	0.071
14	SI	1.500	+ -	0.300	0.700	+ -	0.200	1.300	+ -	0.180
15	P	0.164	+ -	0.016	0.182	+ -	0.018	0.168	+ -	0.017
16	S	2.567	+ -	0.334	3.544	+ -	0.449	2.811	+ -	0.281
17	CL	1.700	+ -	0.400	0.300	+ -	0.100	1.350	+ -	0.206
19	K	0.550	+ -	0.055	0.613	+ -	0.061	0.566	+ -	0.057
20	CA	0.200	+ -	0.100	0.300	+ -	0.100	0.225	+ -	0.071
22	TI	0.026	+ -	NR	0.033	+ -	NR	0.028	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.011	+ -	NR	0.014	+ -	NR	0.012	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	0.164	+ -	0.016	0.386	+ -	0.039	0.219	+ -	0.022
28	NI	0.098	+ -	NR	0.104	+ -	0.010	0.099	+ -	NR
29	CU	0.207	+ -	0.021	0.273	+ -	0.027	0.223	+ -	0.022
30	ZN	53.517	+ -	5.352	59.174	+ -	5.917	54.931	+ -	5.493
33	AS	1.424	+ -	0.142	1.525	+ -	0.152	1.449	+ -	0.145
34	SE	0.011	+ -	NR	0.012	+ -	NR	0.011	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
46	PD	0.128	+ -	0.013	0.063	+ -	0.011	0.112	+ -	0.011
47	AG	0.048	+ -	NR	0.039	+ -	0.012	0.046	+ -	NR
48	CD	0.084	+ -	NR	0.062	+ -	0.019	0.078	+ -	0.011
49	IN	0.056	+ -	NR	0.030	+ -	NR	0.049	+ -	NR
50	SN	0.703	+ -	0.070	0.706	+ -	0.071	0.704	+ -	0.070
51	SB	0.545	+ -	0.054	0.587	+ -	0.061	0.555	+ -	0.055
56	BA	<	+ -	0.039	<	+ -	0.100	<	+ -	0.054
80	HG	0.064	+ -	NR	0.061	+ -	NR	0.063	+ -	NR
82	PB	7.459	+ -	0.746	9.645	+ -	0.964	8.005	+ -	0.800
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		71.726			78.653			73.454		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : ZINC OXIDE FUMING STACK.COARSE FRACTION 2.5-7 UM. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29303	43	ZINC	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	ZINC OXIDE FUMING STACK. LEAD SMELTING SLAG
29303		OXIDE	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	FUMED FOR THE PRODUCTION OF ZINC OXIDE.
29303		FUMING	THE STATE OF MONTANA. NEA, INC.(1982)	PULVERIZED COAL FUEL. BAGHOUSE ABATEMENT
29303				SYSTEM. SAMPLES COLLECTED WITH DILUTION
29303				SAMPLER.
29303				
29303				

SOURCE: PRIMARY LEAD SMELTING-SINTERING
SCC: 3-03-010-01
CONTROLS: BAGHOUSE

PROFILE: 29304
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.900	+ -	0.090	1.000	+ -	0.300	0.922	+ -	0.180
14	SI	3.000	+ -	0.300	3.500	+ -	1.000	3.110	+ -	0.707
15	P	0.798	+ -	0.080	0.767	+ -	0.120	0.791	+ -	0.079
16	S	15.829	+ -	1.583	15.097	+ -	2.390	15.667	+ -	1.567
17	CL	1.000	+ -	0.100	0.900	+ -	0.200	0.978	+ -	0.269
19	K	0.889	+ -	0.089	0.741	+ -	0.112	0.856	+ -	0.086
20	CA	2.600	+ -	0.260	5.000	+ -	1.000	3.128	+ -	0.522
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.169	+ -	0.017	0.203	+ -	0.031	0.176	+ -	0.018
23	V	0.000	+ -	0.000	0.000	+ -	0.000	0.000	+ -	0.000
24	CR	0.046	+ -	0.005	0.065	+ -	0.013	0.050	+ -	0.000
25	MN	0.380	+ -	0.038	0.500	+ -	0.100	0.406	+ -	0.064
26	FE	5.764	+ -	0.576	7.761	+ -	1.085	6.203	+ -	0.620
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.082	+ -	0.008	0.093	+ -	0.017	0.084	+ -	0.000
29	CU	1.498	+ -	0.150	2.060	+ -	0.289	1.622	+ -	0.162
30	ZN	4.174	+ -	0.417	5.678	+ -	0.793	4.505	+ -	0.450
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	4.948	+ -	0.495	2.900	+ -	0.429	4.497	+ -	0.450
34	SE	0.129	+ -	0.013	0.085	+ -	0.018	0.119	+ -	0.012
35	BR	0.080	+ -	0.020	0.060	+ -	0.000	0.076	+ -	0.011
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.198	+ -	0.020	0.262	+ -	0.040	0.212	+ -	0.021
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.246	+ -	0.034	0.234	+ -	0.070	0.243	+ -	0.039
48	CD	1.358	+ -	0.000	1.158	+ -	0.192	1.314	+ -	0.131
50	SN	0.234	+ -	0.049	0.128	+ -	0.106	0.211	+ -	0.058
51	SB	1.907	+ -	0.191	1.603	+ -	0.312	1.840	+ -	0.184
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.115	+ -	0.205	0.375	+ -	0.491	0.172	+ -	0.266
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	0.172	+ -	0.022	0.142	+ -	0.033	0.165	+ -	0.020
82	PB	26.610	+ -	2.661	26.900	+ -	3.750	26.674	+ -	2.667
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		73.126			77.212			74.021		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : 0.000 INDICATES VALUES < 0.00%. REF. 43.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29304	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	SINTERING STACK FROM A PRIMARY LEAD SMELTING
29304		SMELTER	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	STACK. WEAK SO2 GAS ONLY IS VENTED THROUGH
29304			THE STATE OF MONTANA. NEA, INC.(1982)	THIS STACK. THE STRONG GAS STREAM IS
29304				UTILIZED IN THE MANUFACTURE OF SULFURIC
29304				ACID. BAGHOUSE ABATEMENT SYSTEMS. SAMPLE
29304				COLLECTED WITH A DILUTION SAMPLER.
29304				

SOURCE: PRIMARY LEAD SMELTING-BLAST FURNANCE UPSET
SCC: 3-03-010-02
CONTROLS: BAGHOUSE

PROFILE: 29305
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	<	+ -	NR	0.220	+ -	0.050	<	+ -	NR
14	SI	0.030	+ -	NR	0.500	+ -	0.200	0.030	+ -	NR
15	P	0.959	+ -	0.096	0.642	+ -	0.064	0.688	+ -	0.069
16	S	19.400	+ -	2.077	11.885	+ -	1.463	14.058	+ -	1.901
17	CL	3.880	+ -	1.000	2.000	+ -	0.500	4.000	+ -	1.000
19	K	2.321	+ -	0.232	1.466	+ -	0.147	1.510	+ -	0.151
20	CA	0.500	+ -	0.100	0.500	+ -	0.073	0.500	+ -	0.100
22	TI	0.033	+ -	NR	0.050	+ -	NR	0.060	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.017	+ -	NR	0.020	+ -	NR	0.023	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	0.124	+ -	0.012	0.942	+ -	0.094	1.624	+ -	0.162
28	NI	0.063	+ -	NR	0.057	+ -	NR	0.067	+ -	NR
29	CU	0.184	+ -	0.018	0.414	+ -	0.041	0.677	+ -	0.068
30	ZN	7.420	+ -	0.754	14.918	+ -	1.492	6.184	+ -	0.618
33	AS	3.349	+ -	0.335	1.541	+ -	0.162	2.855	+ -	0.285
34	SE	0.072	+ -	NR	0.023	+ -	NR	0.074	+ -	0.011
35	BR	0.110	+ -	0.030	0.032	+ -	NR	0.110	+ -	0.030
38	SR	0.035	+ -	NR	0.037	+ -	NR	0.062	+ -	NR
46	PD	0.308	+ -	0.031	0.063	+ -	0.021	0.144	+ -	0.014
47	AG	0.152	+ -	0.015	0.079	+ -	0.029	0.117	+ -	0.012
48	CD	16.240	+ -	1.647	7.872	+ -	0.787	10.202	+ -	1.020
49	IN	0.030	+ -	NR	0.030	+ -	NR	0.030	+ -	NR
50	SN	0.585	+ -	0.058	0.289	+ -	0.058	0.363	+ -	0.036
51	SB	0.297	+ -	0.050	0.217	+ -	0.108	0.399	+ -	0.056
56	BA	0.144	+ -	0.050	<	+ -	0.230	0.213	+ -	0.056
80	HG	0.117	+ -	0.018	0.069	+ -	0.020	0.035	+ -	0.018
82	PB	43.630	+ -	4.395	29.507	+ -	2.951	42.687	+ -	4.269
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		100.000			73.373			86.712		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 43. FINE FRACTION CORRECTED BY 1% TO NORMALIZE TO 100%

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29305	43	PRIMARY	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	BLAST FURNACE UPSET SAMPLES COLLECTED WITH A
29305		LEAD	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	DILUTION SAMPLER.
29305		SMELTING	THE STATE OF MONTANA. NEA, INC.(1982)	
29305				

SOURCE: PRIMARY LEAD SMELTING-ZINC BAGHOUSE
SCC: 3-03-010-08
CONTROLS: BAGHOUSE

PROFILE: 29306
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.050	+ -	0.020	1.551	+ -	0.155	0.600	+ -	0.200
14	SI	0.779	+ -	0.078	5.091	+ -	0.509	2.000	+ -	0.800
15	P	0.311	+ -	0.031	0.272	+ -	0.027	0.190	+ -	0.019
16	S	6.254	+ -	0.639	4.308	+ -	0.575	3.041	+ -	0.558
17	CL	<	+ -	0.054	0.050	+ -	0.050	0.150	+ -	0.050
19	K	0.949	+ -	0.095	0.834	+ -	0.083	0.862	+ -	0.086
20	CA	0.500	+ -	0.300	1.000	+ -	0.200	0.500	+ -	0.100
22	TI	0.042	+ -	NR	0.090	+ -	NR	0.082	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.016	+ -	NR	0.014	+ -	NR	0.017	+ -	NR
25	MN	<	+ -	NR	0.050	+ -	NR	0.030	+ -	NR
26	FE	0.221	+ -	0.022	1.150	+ -	0.115	1.042	+ -	0.104
28	NI	0.095	+ -	NR	0.098	+ -	NR	0.115	+ -	0.011
29	CU	0.259	+ -	0.026	0.498	+ -	0.050	0.625	+ -	0.062
30	ZN	50.140	+ -	5.014	43.478	+ -	4.348	53.304	+ -	5.330
33	AS	2.298	+ -	0.230	1.457	+ -	0.146	1.777	+ -	0.178
34	SE	0.011	+ -	NR	0.011	+ -	NR	0.020	+ -	NR
35	BR	0.030	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	0.014	+ -	NR	0.011	+ -	NR
40	ZR	0.034	+ -	0.014	0.053	+ -	0.013	0.080	+ -	NR
47	AG	0.032	+ -	0.019	0.037	+ -	0.017	0.033	+ -	NR
48	CD	0.080	+ -	0.031	0.030	+ -	0.026	0.070	+ -	0.013
49	PD	0.030	+ -	NR	<	+ -	NR	0.011	+ -	NR
50	SN	1.066	+ -	0.107	0.702	+ -	0.070	0.861	+ -	0.086
51	SB	0.717	+ -	0.092	0.413	+ -	0.069	0.728	+ -	0.073
56	BA	<	+ -	0.168	<	+ -	0.144	<	+ -	0.055
80	HG	0.048	+ -	0.011	0.049	+ -	NR	0.059	+ -	NR
82	PB	12.440	+ -	1.244	12.482	+ -	1.248	12.780	+ -	1.278
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		76.402			73.732			78.988		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :REF. 43.

13-Jun-85 SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29306	43	ZINC	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	ZINC FUNING BAGHOUSE. SAMPLES COLLECTED
29306		FUMING	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	WITHIN THE BAGHOUSE WITH DICHOTOMOUS AND
29306			THE STATE OF MONTANA. NEA, INC.(1982)	LOW-VOLUME SAMPLERS. THE BAGHOUSE IS THE
29306				CONTROL SYSTEM FOR THE FUMING OF SLAG FROM A
29306				LEAD BLAST FURNACE.
29306				

SOURCE: PRIMARY LEAD SMELTING-DROSS REVERB. FURNACE
SCC: 3-03-010-03
CONTROLS: NONE

PROFILE: 29307
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM +-	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.030	+ -	NR	0.500	+ -	0.100	0.030	+ -	NR
14	SI	0.200	+ -	0.100	1.460	+ -	0.146	0.200	+ -	0.100
15	P	0.125	+ -	0.012	0.141	+ -	0.014	0.035	+ -	NR
16	S	1.667	+ -	0.244	1.534	+ -	0.533	<	+ -	0.582
17	CL	<	+ -	0.017	<	+ -	0.034	<	+ -	0.038
19	K	0.108	+ -	0.011	0.279	+ -	0.028	<	+ -	NR
20	CA	0.600	+ -	0.100	1.160	+ -	0.116	0.763	+ -	0.076
22	TI	0.060	+ -	NR	0.056	+ -	NR	0.016	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	0.013	+ -	NR	0.016	+ -	NR
25	MN	0.013	+ -	NR	0.039	+ -	NR	0.024	+ -	NR
26	FE	0.106	+ -	0.011	0.752	+ -	0.075	0.744	+ -	0.074
28	NI	0.054	+ -	NR	0.076	+ -	NR	0.086	+ -	NR
29	CU	0.140	+ -	0.014	1.873	+ -	0.187	2.894	+ -	0.289
30	ZN	2.361	+ -	0.236	0.963	+ -	0.096	1.358	+ -	0.136
33	AS	57.818	+ -	5.782	20.000	+ -	2.000	24.000	+ -	3.000
34	SE	0.115	+ -	0.011	0.084	+ -	NR	0.093	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	0.014	+ -	NR	0.011	+ -	NR
46	PD	2.389	+ -	0.239	0.504	+ -	0.050	1.090	+ -	0.109
47	AG	0.854	+ -	0.085	0.300	+ -	0.030	0.494	+ -	0.049
48	CD	1.164	+ -	0.116	0.800	+ -	0.200	1.219	+ -	0.122
49	IN	0.023	+ -	NR	0.191	+ -	0.019	0.231	+ -	0.023
50	SN	0.191	+ -	0.019	1.600	+ -	0.300	1.242	+ -	0.124
51	SB	5.200	+ -	1.000	2.000	+ -	0.300	2.700	+ -	0.400
56	BA	0.078	+ -	0.022	0.032	+ -	0.023	0.125	+ -	0.014
80	HG	0.269	+ -	0.027	0.107	+ -	0.011	0.104	+ -	0.010
82	PB	5.561	+ -	0.556	16.000	+ -	4.000	13.482	+ -	1.348
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		79.126			50.478			50.957		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : PRIMARY LEAD SMELTING DROSSING AND REVERBATORY FURNACE PROCESS FUGITIVE EMISSIONS.REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29307	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	PRIMARY LEAD SMELTING - DROSSING AND
29307		SMELTING	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	REVERBERATORY FURNACE BUILDING PROCESS
29307			THE STATE OF MONTANA. NEA, INC.(1982)	FUGITIVE EMISSIONS. SAMPLES COLLECTED NEAR
29307				BUILDING VENTS WITH DICHOTOMOUS AND
29307				LOW-VOLUME SAMPLER.
29307				

SOURCE: PRIMARY LEAD SMELTING - SINTER PRODUCTION
SCC: 3-05-010-25
CONTROLS: NONE

PROFILE: 29309
RANKING: ·3321
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM ********* % BY WT	+-	****** UNC	COARSE 2.5-10UM ********* % BY WT	+-	****** UNC	TSP <30 UM ********* % BY WT	+-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.050	+ -	0.050	0.650	+ -	0.065	0.050	+ -	0.050
14	SI	0.900	+ -	0.200	2.900	+ -	0.400	0.460	+ -	0.100
15	P	0.300	+ -	0.030	0.360	+ -	0.040	0.120	+ -	0.040
16	S	1.400	+ -	2.000	6.000	+ -	2.000	1.000	+ -	1.000
17	CL	2.000	+ -	1.000	1.000	+ -	0.300	0.500	+ -	0.500
19	K	0.020	+ -	0.020	0.240	+ -	0.024	0.050	+ -	0.050
20	CA	0.050	+ -	0.020	2.000	+ -	0.200	0.500	+ -	0.100
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	0.040	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.016	+ -	NR	0.038	+ -	NR	0.017	+ -	NR
25	MN	0.015	+ -	NR	0.300	+ -	0.100	0.120	+ -	0.012
26	FE	0.160	+ -	0.020	4.800	+ -	0.500	2.344	+ -	0.234
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.056	+ -	NR	0.083	+ -	NR	0.061	+ -	NR
29	CU	0.221	+ -	0.022	1.659	+ -	0.166	1.007	+ -	0.101
30	ZN	0.867	+ -	0.087	4.243	+ -	0.424	2.688	+ -	0.269
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	8.692	+ -	0.869	5.532	+ -	0.553	4.921	+ -	0.492
34	SE	0.155	+ -	0.015	0.084	+ -	NR	0.101	+ -	0.010
35	BR	0.100	+ -	0.050	0.100	+ -	0.050	0.100	+ -	0.050
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.030	+ -	NR	0.184	+ -	0.018	0.097	+ -	NR
40	PD	2.702	+ -	0.270	0.746	+ -	0.075	0.730	+ -	0.073
47	AG	0.699	+ -	0.070	0.378	+ -	0.038	0.347	+ -	0.035
48	CD	8.859	+ -	0.886	2.884	+ -	0.288	3.705	+ -	0.370
50	IN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SN	2.541	+ -	0.254	0.680	+ -	0.068	0.776	+ -	0.078
55	SB	2.380	+ -	0.238	1.833	+ -	0.183	1.725	+ -	0.172
56	BA	0.522	+ -	0.052	0.257	+ -	0.026	0.275	+ -	0.027
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	0.129	+ -	0.018	0.187	+ -	0.019	0.119	+ -	0.013
82	PB	46.503	+ -	4.650	27.915	+ -	2.791	31.410	+ -	3.141
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		79.367			65.093			53.223		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : SINTER PROCESS FUGITIVES.REF.43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
29309	43	LEAD	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	PRIMARY LEAD SMELTING SINTERING BUILDING
29309		SMELTING	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	PROCESS FUGITIVE EMISSIONS. SAMPLES
29309		SINTERING	THE STATE OF MONTANA. NEA, INC.(1982)	COLLECTED AT VARIOUS LOCATIONS ON THE PILE.
29309				BULK SAMPLE SIEVED AND RESUSPENDED.
29309				

C. Transportation Sources

Transportation sources (30000 series) such as gasoline and diesel fueled vehicles, jet aircraft and composite profiles are included in this section. Composite transportation profiles describe the chemical composition of a mixture of gasoline and diesel vehicles within a specific airshed at a specific point in time. They are typically calculated by weighting the emission profiles for leaded, unleaded, diesel and tirewear in accordance with the airshed emission inventory. They may also be based on chemical analysis of aerosol sample taken in tunnels or near heavily travelled roadways. Refer to the profile abstracts for information related to each specific data set.

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13-Jun-85                                     SOURCE LIBRARY


            SOURCE:   LIGHT DUTY VEHICLES-LEADED                              PROFILE:    31101
            SCC:        NONE                                                  RANKING:     1334
            CONTROLS:   NONE                                                  RATING :        C
-----------------------------------------------------------------------------------------------------
                                   FINE                              COARSE                            TSP
 SPECIE      SPECIE   *********   <2.5 UM   ******      *********   2.5-10UM  ******     *********   <30 UM   ******
 NUMBER       NAME    % BY WT      + -       UNC        % BY WT       +-       UNC       % BY WT      +-      UNC
 -------      -----   ---------   -------   -----       ---------   --------  ------     ---------   -----    ------
      4        BE       NA          + -       NA          NA           + -       NA                    + -
      5        B        NA          + -       NA          NA           + -       NA                    + -
      9        F        NA          + -       NA          NA           + -       NA                    + -
     11        NA       NA          + -       NA          NA           + -       NA                    + -
     12        MG       NA          + -       NA          NA           + -       NA                    + -
     13        AL             0     + -       NR                0      + -       NR                    + -
     14        SI             0     + -       NR                0      + -       NR                    + -
     15        P        NR          + -       NR          NR           + -       NR                    + -
     16        S        NR          + -       NR          NR           + -       NR                    + -
     17        CL             5     + -       NR                5      + -       NR                    + -
     19        K        NR          + -       NR          NR           + -       NR                    + -
     20        CA       NR          + -       NR          NR           + -       NR                    + -
     21        SC       NR          + -       NR          NR           + -       NR                    + -
     22        TI       NR          + -       NR          NR           + -       NR                    + -
     23        V        NR          + -       NR          NR           + -       NR                    + -
     24        CR       NR          + -       NR          NR           + -       NR                    + -
     25        MN       NR          + -       NR          NR           + -       NR                    + -
     26        FE             0     + -       NR                0      + -       NR                    + -
     27        CO       NR          + -       NR          NR           + -       NR                    + -
     28        NI       NR          + -       NR          NR           + -       NR                    + -
     29        CU             0     + -       NR                0      + -       NR                    + -
     30        ZN             0     + -       NR                0      + -       NR                    + -
     31        GA       NR          + -       NR          NR           + -       NR                    + -
     32        GE       NR          + -       NR          NR           + -       NR                    + -
     33        AS       NR          + -       NR          NR           + -       NR                    + -
     34        SE       NR          + -       NR          NR           + -       NR                    + -
     35        BR             8     + -       NR                8      + -       NR                    + -
     37        RB       NR          + -       NR          NR           + -       NR                    + -
     38        SR       NR          + -       NR          NR           + -       NR                    + -
     40        ZR       NR          + -       NR          NR           + -       NR                    + -
     47        AG       NR          + -       NR          NR           + -       NR                    + -
     48        CD       NR          + -       NR          NR           + -       NR                    + -
     50        SN       NR          + -       NR          NR           + -       NR                    + -
     51        SB       NR          + -       NR          NR           + -       NR                    + -
     55        CS       NR          + -       NR          NR           + -       NR                    + -
     56        BA       NR          + -       NR          NR           + -       NR                    + -
     58        CE       NR          + -       NR          NR           + -       NR                    + -
     80        HG       NR          + -       NR          NR           + -       NR                    + -
     82        PB            21     + -       NR               21      + -       NR                    + -
    201        OC            50     + -       NR               50      + -       NR                    + -
    202        EC       NA          + -       NR          NA           + -       NR                    + -
    203        SO4            0     + -       NR                0      + -       NR                    + -
    204        NO3      NA          + -       NR          NA           + -       NR                    + -
 SUM( % )                    85                                85                          0

 NOTES:   OC = ORGANIC CARBON :  EC = ELEMENTAL CARBON      NR: NOT REPORTED
          < = LESS THAN DETECTION LIMIT       NA:NOT ANALYZED
          OTHER NOTES :      PROFILE IS  DERIVED FROM DATA OBTAINED FROM 3 EARLIER STUDIES
                             FINE AND COARSE FRACTION COMPOSITION ASSUMED SIMILAR. REF 22
```

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
31101	22	LEADED	GLEN R. CASS AND GREGORY	CASS PROFILE NO 54 DEVELOPED FROM DATA
31101		GASOLINE	MCRAE,"SOURCE-RECEPTOR RECONCILLIATION OF	OBTAINED FROM EARLIER STUDIES BY
31101			SOUTH COAST AIR BASIN PARTICULATE AIR QUALITY	HUNTZICKER(1981),HABIBI(1973) AND
31101			DATA-DRAFT". PREPARED FOR CALIFORNIA AIR	WATSON(1979). ASSUMES 2 G PB /GAL OF FUEL
31101			RESOURCE BOARD (1981).	AND THAT ONLY 30% OF THE FUEL LEAD IS
31101				EMITTED AS PARTICLES <9UM . TRACE ELEMENT
31101				DATA OTHER THAN PB IS OF POOR QUALITY. SO4
31101				BASED ON 0.05 %S IN FUEL AND SO4 EMISSION
31101				FACTOR ESTIMATES.
31101				

IV.4. ENTERING RESULTS..............................36
IV.5. GENERATING REPORTS............................37
IV.6. LOOKING BEHIND AND AHEAD......................37
IV.7. CHAPTER SUMMARY...............................39

13-Jun-85

SOURCE LIBRARY

SOURCE: HEAVY DUTY VEHICLES-LEADED
SCC: NONE
CONTROLS: NONE

PROFILE: 31102
RANKING: 2234
RATING : C

SPECIE NUMBER	SPECIE NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -							
5	B		+ -			+ -		NA	+ -	NA
9	F		+ -			+ -		NA	+ -	NA
11	NA		+ -			+ -		NA	+ -	NA
12	MG		+ -			+ -		NA	+ -	NA
13	AL		+ -			+ -		NA	+ -	NA
14	SI		+ -			+ -		0.140	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		0.070	+ -	NR
17	CL		+ -			+ -		<	+ -	NR
19	K		+ -			+ -		3.500	+ -	NR
20	CA		+ -			+ -		<	+ -	NR
21	SC		+ -			+ -		0.120	+ -	NR
22	TI		+ -			+ -		<	+ -	NR
23	V		+ -			+ -		<	+ -	NR
24	CR		+ -			+ -		<	+ -	NR
25	MN		+ -			+ -		<	+ -	NR
26	FE		+ -			+ -		0.030	+ -	NR
27	CO		+ -			+ -		3.100	+ -	NR
28	NI		+ -			+ -		<	+ -	NR
29	CU		+ -			+ -		<	+ -	NR
30	ZN		+ -			+ -		<	+ -	NR
31	GA		+ -			+ -		0.120	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		<	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		<	+ -	NR
37	RB		+ -			+ -		13.840	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		<	+ -	NR
50	SN		+ -			+ -		<	+ -	NR
51	SB		+ -			+ -		<	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		<	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		<	+ -	NR
201	OC		+ -			+ -		30.350	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0			0	+ -		NA	+ -	NR
								51.270		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON NR: NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : ABOUT 4.85% EXTRACTABLE ORGANIC . VALUES BASED ON 4 TESTS OF TWO TRUCKS.
REF. 25

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
31102	25	LEADED	H.E. DIETZMNANN,M.A.PARNESS AND R.L.	MEAN VALUES OF TESTS FROM TWO HEAVY DUTY
31102		GASOLINE	BRADOW,"EMISSIONS FROM GASOLINE AND DIESEL	LEADED GASOLINE TRUCKS (1.64 G PB/GAL)
31102		(TRUCKS)	DELIVERY TRUCKS BY CHASSIS TRANSIENT CYCLE,"	TESTED ON A CHASSIS DYNAMOMETER WITH
31102			ASME 81-DGP-6(1981)	DILUTION TUNNEL. 370 & 345 CID ENGINES.
31102				TOTAL OF 4 SAMPLES DURING HOT AND COLD
31102				CYCLES ANALYZED BY XRF ,ORGANIC EXTRACTION.
31102				NO UPPER CUT POINT SPECIFIED.ORIGIONAL DATA
31102				IN MG/KM.
31102				

SOURCE: LIGHT DUTY VEHICLES - UNLEADED
SCC: NONE
CONTROLS: NONE

PROFILE: 31201
RANKING: 2224
RATING : C

SPECIE NUMBER	SPECIE NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	0.120	+ -	NR	0.120	+ -	NR		+ -	
14	SI	0.510	+ -	NR	0.510	+ -	NR		+ -	
15	P	NR	+ -	NR	NR	+ -	NR		+ -	
16	S	NR	+ -	NR	NR	+ -	NR		+ -	
17	CL	NR	+ -	NR	NR	+ -	NR		+ -	
19	K	0.044	+ -	NR	0.044	+ -	NR		+ -	
20	CA	0.170	+ -	NR	0.170	+ -	NR		+ -	
21	SC	NR	+ -	NR	NR	+ -	NR		+ -	
22	TI	NR	+ -	NR	NR	+ -	NR		+ -	
23	V	NR	+ -	NR	NR	+ -	NR		+ -	
24	CR	NR	+ -	NR	NR	+ -	NR		+ -	
25	MN	0.015	+ -	NR	0.015	+ -	NR		+ -	
26	FE	0.110	+ -	NR	0.110	+ -	NR		+ -	
27	CO	NR	+ -	NR	NR	+ -	NR		+ -	
28	NI	0.015	+ -	NR	0.015	+ -	NR		+ -	
29	CU	0.024	+ -	NR	0.024	+ -	NR		+ -	
30	ZN	0.080	+ -	NR	0.080	+ -	NR		+ -	
31	GA	NR	+ -	NR	NR	+ -	NR		+ -	
32	GE	NR	+ -	NR	NR	+ -	NR		+ -	
33	AS	NR	+ -	NR	NR	+ -	NR		+ -	
34	SE	NR	+ -	NR	NR	+ -	NR		+ -	
35	BR	NR	+ -	NR	NR	+ -	NR		+ -	
37	RB	NR	+ -	NR	NR	+ -	NR		+ -	
38	SR	NR	+ -	NR	NR	+ -	NR		+ -	
40	ZR	NR	+ -	NR	NR	+ -	NR		+ -	
47	AG	NR	+ -	NR	NR	+ -	NR		+ -	
48	CD	NR	+ -	NR	NR	+ -	NR		+ -	
50	SN	NR	+ -	NR	NR	+ -	NR		+ -	
51	SB	NR	+ -	NR	NR	+ -	NR		+ -	
55	CS	NR	+ -	NR	NR	+ -	NR		+ -	
56	BA	NR	+ -	NR	NR	+ -	NR		+ -	
58	CE	NR	+ -	NR	NR	+ -	NR		+ -	
80	HG	NR	+ -	NR	NR	+ -	NR		+ -	
82	PB	NR	+ -	NR	NR	+ -	NR		+ -	
201	OC	21.100	+ -	NR	21.100	+ -	NR		+ -	
202	EC	17.800	+ -	NR	17.800	+ -	NR		+ -	
203	SO4	50.000	+ -	NR	50.000	+ -	NR		+ -	
204	NO3	NR	+ -	NR	NR	+ -	NR		+ -	
SUM(%)		89.988			89.988					

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : DATA AERIVED FROM COMPOSITE OF 3 EARLIER STUDIES. ELEMENT DATA FROM REF 8.
FINE AND COARSE COMPOSITIION ASSUMED SIMILAR, REF. 22 & 56.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
31201	22	UNLEADED	GLEN R. CASS AND GREGORY	CASS PROFILE NO. 53. SULFATE DATA DEVELOPED
31201		AUTO	MCRAE,"SOURCE-RECEPTOR RECONCILLIATION OF	FROM LARESGOTI AND SPRINGER (1977); CARBON
31201			SOUTH COAST AIR BASIN PARTICULATE AIR QUALITY	FROM MULHBAIER AND WILLIAMS (1981); TRACE
31201			DATA-DRAFT". PREPARED FOR CALIFORNIA AIR	METALS FROM WATSON (1979).
31201			RESOURCE BOARD (1981).	
31201				

SOURCE: LIGHT DUTY VEHICLES-DIESEL
SCC: NONE
CONTROLS: NONE

PROFILE: 32101
RANKING: 2332
RATING : C

SPECIE NUMBER	SPECIE NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.110	+ -	NR	0.110	+ -	NR	0.110	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	0.032	+ -	NR	0.032	+ -	NR	0.032	+ -	NR
16	S	0.700	+ -	NR	0.700	+ -	NR	0.700	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	<	+ -	NR	<	+ -	NR	<	+ -	NR
20	CA	0.120	+ -	NR	0.120	+ -	NR	0.120	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	0.250	+ -	NR	0.250	+ -	NR	0.250	+ -	NR
26	FE	0.330	+ -	NR	0.330	+ -	NR	0.330	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	<	+ -	NR	<	+ -	NR	<	+ -	NR
30	ZN	0.067	+ -	NR	0.067	+ -	NR	0.067	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.420	+ -	NR	0.420	+ -	NR	0.420	+ -	NR
200	TC	73.000	+ -	5.700	73.000		5.700	73.000	+ -	5.700
201	OC	21.900	+ -	NR	21.900	+ -	NR	21.900	+ -	NR
202	EC	51.100	+ -	NR	51.000	+ -	NR	51.000	+ -	NR
203	SO4	2.100	+ -	NR	2.100	+ -	NR	2.100	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		77.129			77.129			77.129		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON NR: NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : NO. 2 DIESEL FUEL URBAN DRIVING CYCLE. 70% OF TC ASSUMED TO BE EC. REF. 20.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
32101	20	DIESEL	US EPA "ENGINE-RELATED PARTICULATE	BASED ON LIGHT DUTY, 4-STROKE ENGINE BURNING
32101		LIGHT	MATTER-A COMPILATION OF 180 REFERENCES"	NO. 2 DIESEL FUEL OF .081% SULFUR CONTENT.
32101		DUTY	UNPUBLISHED. PROVIDED BY F. BLACK,USEPA,ESRL.	SOLUBLE ORGANICS ESTIMATED AT 14.5+-9.0% OF
32101			U.S. EPA, ESRL. RTP, NC.(1981).	WHICH 83.7% IS CARBON,12% HYDROGEN AND .71%
32101			TABLES 2-35 THRU 2-42.	NITROGEN.BAP 9.8E-4 +- 9.7E-4 %. VOLKSWAGEN
32101				RABBIT DIESEL.
32101				

13-Jun-85

SOURCE LIBRARY

SOURCE: HEAVY DUTY DIESEL
SCC: NONE
CONTROLS: NONE

PROFILE: 32202
RANKING: 3338
RATING : A

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	0.130	+ -	0.020	0.130	+ -	0.020	0.130	+ -	0.020
9	F	<	+ -	NR	<	+ -	NR	<	+ -	NR
11	NA	0.800	+ -	0.100	0.800	+ -	0.100	0.800	+ -	0.100
12	MG	0.900	+ -	0.150	0.900	+ -	0.150	0.900	+ -	0.150
13	AL	1.000	+ -	0.200	1.000	+ -	0.200	1.000	+ -	0.200
14	SI	1.600	+ -	0.200	1.600	+ -	0.200	1.600	+ -	0.200
15	P	0.150	+ -	0.020	0.150	+ -	0.020	0.150	+ -	0.020
16	S	2.700	+ -	NR	2.700	+ -	NR	2.700	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	0.170	+ -	0.030	0.170	+ -	0.030	0.170	+ -	0.030
20	CA	0.700	+ -	0.200	0.700	+ -	0.200	0.700	+ -	0.200
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.014	+ -	0.004	0.014	+ -	0.004	0.014	+ -	0.004
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.002	+ -	0.001	0.002	+ -	0.001	0.002	+ -	0.001
25	MN	0.039	+ -	0.004	0.039	+ -	0.004	0.039	+ -	0.004
26	FE	0.600	+ -	0.100	0.600	+ -	0.100	0.600	+ -	0.100
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.003	+ -	0.001	0.003	+ -	0.001	0.003	+ -	0.001
29	CU	0.025	+ -	0.010	0.025	+ -	0.010	0.025	+ -	0.010
30	ZN	0.160	+ -	0.010	0.160	+ -	0.010	0.160	+ -	0.010
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<0.05	+ -	NR	<0.05	+ -	NR	<0.05	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.014	+ -	0.003	0.014	+ -	0.003	0.014	+ -	0.003
40	ZR	0.004	+ -	0.001	0.004	+ -	0.001	0.004	+ -	0.001
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.077	+ -	0.003	0.077	+ -	0.003	0.077	+ -	0.003
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	1.300	+ -	0.300	1.300	+ -	0.300	1.300	+ -	0.300
201	OC	20.900	+ -	NR	20.900	+ -	0.140	20.900	+ -	0.140
202	EC	54.800	+ -	NR	54.800	+ -	NR	54.800	+ -	NR
203	SO4	4.900	+ -	0.900	4.900	+ -	0.900	4.900	+ -	0.900
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		88.288			88.288			88.288		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : ENTIRELY DIESEL TRUCKS (30 TON). TUSCARORA, PA. TUNNEL 1977. HYDROGEN 5+-1%,
REF. 41 AND 56.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
32202	41,56	DIESEL	W. R. PIERSON AND W. W.	DIESEL TRUCK PROFILE OBTAINED BY REGRESSION
32202		HEAVY	BRACHACZEK,"PARTICULATE MARK ASSOCIATED WITH	ANALYSIS OF TUSCARORA TUNNEL DATA, 1977.
32202		DUTY	VEHICLES ON THE ROAD II, " AEROSOL SCIENCE	SEE PROFILE 33001. ALL 3 SIZE FRACTIONS
32202			AND TECHNOLOGY 2:1-40 (1983). TABLE 2.	ASSUMED OF SIMILAR COMPOSITION.
32202			AND	
32202			A.C. SCKARLAT AND S. JAPAR,"OPTICAL AND	
32202			CHEMICAL PROPERTIES OF PARTICLE EMISSIONS	
32202			FROM ON-ROAD VEHICLES," JOURNAL AIR POLLUTION	
32202			CONTROL ASSOC. 33:6 (1983).	
32202				

SOURCE: LEADED/UNLEADED GASOLINE COMPOSITE-1977
SCC: NONE
CONTROLS: NONE

PROFILE: 33001
RANKING: 3338
RATING : A

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM ********* % BY WT	+ -	****** UNC	COARSE 2.5-10UM ********* % BY WT	+-	****** UNC	TSP <30 UM ********* % BY WT	+-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	0.059	+ -	0.110	0.059	+ -	0.110	0.059	+ -	0.110
9	F	<	+ -	NR	<	+ -	NR	<	+ -	NR
11	NA	0.169	+ -	0.700	0.169	+ -	0.700	0.169	+ -	0.700
12	MG	1.099	+ -	0.600	1.099	+ -	0.600	1.099	+ -	0.600
13	AL	0.254	+ -	0.900	0.254	+ -	0.900	0.254	+ -	0.900
14	SI	0.845	+ -	1.300	0.845	+ -	1.300	0.845	+ -	1.300
15	P	0.110	+ -	0.110	0.110	+ -	0.110	0.110	+ -	0.110
16	S	0.761	+ -	NR	0.761	+ -	NR	0.761	+ -	NR
17	CL	1.352	+ -	0.800	1.352	+ -	0.800	1.352	+ -	0.800
19	K	0.254	+ -	0.200	0.254	+ -	0.200	0.254	+ -	0.200
20	CA	2.113	+ -	0.700	2.113	+ -	0.700	2.113	+ -	0.700
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.008	+ -	0.020	0.008	+ -	0.020	0.008	+ -	0.020
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	0.001	+ -	0.006	0.001	+ -	0.006	0.001	+ -	0.006
25	MN	0.135	+ -	0.025	0.135	+ -	0.025	0.135	+ -	0.025
26	FE	0.507	+ -	0.600	0.507	+ -	0.600	0.507	+ -	0.600
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	<0.006	+ -	NR	<0.006	+ -	NR	<0.006	+ -	NR
29	CU	0.059	+ -	0.030	0.059	+ -	0.030	0.059	+ -	0.030
30	ZN	0.068	+ -	0.080	0.068	+ -	0.080	0.068	+ -	0.080
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	9.464	+ -	0.900	9.464	+ -	0.900	9.464	+ -	0.900
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.010	+ -	0.016	0.010	+ -	0.016	0.010	+ -	0.016
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	0.002	+ -	0.009	0.002	+ -	0.009	0.002	+ -	0.009
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	0.059	+ -	0.020	0.059	+ -	0.020	0.059	+ -	0.020
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	20.280	+ -	NR	20.280	+ -	NR	20.280	+ -	NR
200	TC	56.615	+ -	42.00	56.615	+ -	42.00	56.615	+ -	42.00
202	EC	<	+ -	NR	<	+ -	NR	<	+ -	NR
203	SO4	5.915	+ -	3.000	5.915	+ -	3.000	5.915	+ -	3.000
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		100			100			100		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COMPOSITE OF 39% UNLEADED, 52% LEADED REGULAR, 9% PREMIUM LEADED. TUSCARORA, PA TUNNEL 1977 EXPERIMENT. VALUES CORRRECTED BY 18% TO NORMALIZE TO 100% OF MASS.
REF. 41

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
33001	41	TRANSPORT	W. R. PIERSON AND W. W.	MIXED LEADED UNLEADED TRANSPORTATION PROFILE
33001		COMPOSITE	BRACHACZEK,"PARTICULATE MATTER ASSOCIATED	ESTIMATED BY REGRESSION ANALYSIS OF
33001			WITH VEHICLES ON THE ROAD II, " AEROSOL	TUSCARORA TUNNEL DATA. ASSUME A 39%
33001			SCIENCE AND TECHNOLOGY 2:1-40 (1983). Table 2	UNLEADED AND 53% UNLEADED VEHICLE MIX.
33001				HYDROGEN 10+ -6%, OXYGEN 5%. BASED ON AAS,
33001				XRF, ICAP, INNA, IC, CARBON COMBUSTION OF
33001				<5.5 AND <40UM SAMPLES. ALL 3 SIZE
33001				FRACTIONS ASSUMED SIMILAR BASED ON SIZE
33001				DISTRIBUTION.
33001				

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13-Jun-85                                      SOURCE LIBRARY

            SOURCE:   TRANSPORTATION COMPOSITE - MEDFORD, OR.(1980)                 PROFILE:     33002
            SCC:      NONE                                                          RANKING:      1111
            CONTROLS: NOT APPLICABLE                                                RATING :         C
------------------------------------------------------------------------------------------------------
                                   FINE                              COARSE                         TSP
 SPECIES     SPECIES   *********  <2.5 UM  ******      *********  2.5-10UM ******    *********  <30 UM  ******
 NUMBER       NAME     % BY WT     + -      UNC        % BY WT      +-      UNC      % BY WT     +-      UNC
 -------      -----    ---------  -------  -----      ---------  --------  ------   ---------   -----   ------
       4       BE         NA       + -      NR           NA        + -       NR                  + -
       5       B          NA       + -      NR           NA        + -       NR                  + -
       9       F          NA       + -      NR           NA        + -       NR                  + -
      11       NA       0.083      + -    0.012        0.083       + -     0.012                 + -
      12       MG       0.860      + -    0.740        0.850       + -     0.730                 + -
      13       AL       0.140      + -    0.130          NA        + -       NR                  + -
      14       SI       0.590      + -    0.220        0.280       + -     0.110                 + -
      15       P          NA       + -      NR           NA        + -       NR                  + -
      16       S        3.920      + -    4.950        3.110       + -     3.930                 + -
      17       CL       2.350      + -    0.780        1.690       + -     0.560                 + -
      19       K          <        + -      NR           <         + -       NR                  + -
      20       CA       1.170      + -    1.550        0.560       + -     0.740                 + -
      21       SC         NA       + -      NR           NA        + -       NR                  + -
      22       TI       0.320      + -    0.370          NA        + -       NR                  + -
      23       V          <        + -      NR           <         + -       NR                  + -
      24       CR         <        + -      NR           <         + -       NR                  + -
      25       MN         <        + -      NR           <         + -       NR                  + -
      26       FE       1.850      + -    1.790        1.130       + -     1.100                 + -
      27       CO         NA       + -      NR           NA        + -       NR                  + -
      28       NI         <        + -      NR           <         + -       NR                  + -
      29       CU         <        + -      NR           <         + -       NR                  + -
      30       ZN       0.090      + -    0.090        0.280       + -     0.280                 + -
      31       GA         NA       + -      NR           NA        + -       NR                  + -
      32       GE         <        + -      NR           <         + -       NR                  + -
      33       AS         <        + -      NR           <         + -       NR                  + -
      34       SE         <        + -      NR           <         + -       NR                  + -
      35       BR       5.320      + -    1.810        3.670       + -     1.250                 + -
      37       RB         NA       + -      NR           NA        + -       NR                  + -
      38       SR         <        + -      NR           <         + -       NR                  + -
      40       ZR         NA       + -      NR           NA        + -       NR                  + -
      47       AG         NA       + -      NR           NA        + -       NR                  + -
      48       CD         <        + -      NR           <         + -       NR                  + -
      50       SN         NA       + -      NR           NA        + -       NR                  + -
      51       SB         <        + -      NR           <         + -       NR                  + -
      55       CS         NA       + -      NR           NA        + -       NR                  + -
      56       BA         <        + -      NR           <         + -       NR                  + -
      58       CE         <        + -      NR           <         + -       NR                  + -
      80       HG         <        + -      NR           <         + -       NR                  + -
      82       PB      13.800      + -    2.070        9.600       + -     1.440                 + -
     201       OC      43.120      + -    8.620       38.420       + -     7.680                 + -
     202       EC      26.120      + -    9.660       40.960       + -     15.16                 + -
     203       SO4        NA       + -      NR           NA        + -       NR                  + -
     204       NO3        NA       + -      NR           NA        + -       NR                  + -
 SUM( % )              95.813                       -97.523                          0.000

 NOTES:    OC = ORGANIC CARBON :  EC = ELEMENTAL CARBON :  NA = NOT ANALYZED :  NR = NOT REPORTED
           < = LESS THAN DETECTION LIMIT
           OTHER NOTES :     MEDFORD AEROSOL STUDY, 1980. REF. 45.
```

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13-Jun-85                                SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE   |                  REFERENCE                 |            REFERENCE ABSTRACT              |
NUMBER |NUMBER   |GROUP    |                                            |                                            |
------------------------------------------------------------------------------------------------------------------|
 33002 |       45|TRANSPOR-|R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL  |COMPOSITE TRANSPORTATION SOURCE PROFILE FOR |
 33002 |         |TATION   |CHARACTERIZATION STUDY," REPORT TO THE      |MEDFORD, OREGON, 1980. INCLUDES EMISSIONS   |
 33002 |         |         |OREGON DEPT. ENVIRON. QUALITY. OREGON       |FROM LEADED AND UNLEADED GASOLINE AND DIESEL|
 33002 |         |         |GRADUATE CENTER (1980)                      |COMBUSTION AND TIRE WEAR.                   |
 33002 |         |         |                                            |                                            |
```

SOURCE: TRANSPORTATION COMPOSITE - PORTLAND, OR.(1979)
SCC: NONE
CONTROLS: NONE

PROFILE: 33003
RANKING: 1221
RATING : C

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	0.010	NA	+ -	0.010		+ -	
11	NA	NA	+ -	0.050	NA	+ -	0.050		+ -	
12	MG	NA	+ -	0.500	NA	+ -	0.500		+ -	
13	AL	1.100	+ -	0.500	1.100	+ -	0.500		+ -	
14	SI	0.820	+ -	0.300	0.820	+ -	0.300		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.400	+ -	0.130	0.400	+ -	0.130		+ -	
17	CL	3.000	+ -	1.000	3.000	+ -	1.000		+ -	
19	K	0.072	+ -	0.029	0.072	+ -	0.029		+ -	
20	CA	1.250	+ -	0.500	1.250	+ -	0.500		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	<	+ -	0.100	<	+ -	0.100		+ -	
23	V	<	+ -	0.005	<	+ -	0.005		+ -	
24	CR	<	+ -	0.010	<	+ -	0.010		+ -	
25	MN	<	+ -	0.016	<	+ -	0.016		+ -	
26	FE	2.100	+ -	0.800	2.100	+ -	0.800		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.018	+ -	0.008	0.018	+ -	0.008		+ -	
29	CU	0.073	+ -	0.030	0.073	+ -	0.030		+ -	
30	ZN	0.350	+ -	0.130	0.350	+ -	0.130		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	5.000	+ -	1.700	5.000	+ -	1.700		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	20.000	+ -	3.000	20.000	+ -	3.000		+ -	
201	OC	43.400	+ -	6.90	43.400	+ -	6.90		+ -	
202	EC	18.970	+ -	6.410	18.970	+ -	6.410		+ -	
203	SO4	1.300	+ -	0.400	1.300	+ -	0.400		+ -	
204	NO3	0.910	+ -	0.300	0.910	+ -	0.300		+ -	
SUM(%)		98.763			98.763			• 0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46. ORIGIONAL OC,EC DATA UPDATED BY SHAH (REF. 54).

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
33003	46	TRANSPOR-	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	COMPOSITE LEADED AND UNLEADED AUTOMOTIVE
33003		TATION	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	EXHAUST. BASED ON TUNNEL STUDIES AND DIRECT
33003			FINE AND TOTAL SUSPENDED PARTICULATE MATTER	EXHAUST MEASUREMENTS.
33003			IN PORTLAND,OREGON," PHD THESIS. OREGON	
33003			GRADUATE CENTER(1979)	PROFILES DEVELOPED DURING THE PACS STUDY
33003			AND	WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
33003			JITENDRA J. SHAH,"MEASUREMENTS OF	(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
33003			CARBONACEOUS AEROSOL ACROSS THE U.S.: SOURCES	NO DILUTION AIR. UPPER CUT POINT ABOUT 20
33003			AND ROLE IN VISIBILITY DEGREDATION,"PHD	UM,D50. ANALYSIS BY XRF AND INNA, IC AND
33003			THESIS,OREGON GRADUATE CENTER. MAY,1981.	CARBON OXIDATION (CORRECTED FOR ARTIFACT EC).
33003			TABLE A.2.	SINCE NO DILUTION AIR WAS USED DURING
33003				SAMPLING, ORGANIC CARBON IS UNDERESTIMATED.
33003				ORIGIONAL PACS EC,OC ANALYSIS REVISED BY SHAW
33003				

SOURCE: JET AIRCRAFT
SCC: NONE
CONTROLS: NONE

PROFILE: 34001
RANKING: 2122
RATING : D

SPECIE NUMBER	SPECIE NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM +-	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -		NR	+ -	NR		+ -	
5	B		+ -		NR	+ -	NR		+ -	
9	F		+ -		NR	+ -	NR		+ -	
11	NA		+ -		NR	+ -	NR		+ -	
12	MG		+ -		NR	+ -	NR		+ -	
13	AL		+ -		NR	+ -	NR		+ -	
14	SI		+ -		NR	+ -	NR		+ -	
15	P		+ -		NR	+ -	NR		+ -	
16	S		+ -		NR	+ -	NR		+ -	
17	CL		+ -		NR	+ -	NR		+ -	
19	K		+ -		NR	+ -	NR		+ -	
20	CA		+ -		NR	+ -	NR		+ -	
21	SC		+ -		NR	+ -	NR		+ -	
22	TI		+ -		NR	+ -	NR		+ -	
23	V		+ -		NR	+ -	NR		+ -	
24	CR		+ -		NR	+ -	NR		+ -	
25	MN		+ -		NR	+ -	NR		+ -	
26	FE		+ -		NR	+ -	NR		+ -	
27	CO		+ -		NR	+ -	NR		+ -	
28	NI		+ -		NR	+ -	NR		+ -	
29	CU		+ -		NR	+ -	NR		+ -	
30	ZN		+ -		NR	+ -	NR		+ -	
31	GA		+ -		NR	+ -	NR		+ -	
32	GE		+ -		NR	+ -	NR		+ -	
33	AS		+ -		NR	+ -	NR		+ -	
34	SE		+ -		NR	+ -	NR		+ -	
35	BR		+ -		NR	+ -	NR		+ -	
37	RB		+ -		NR	+ -	NR		+ -	
38	SR		+ -		NR	+ -	NR		+ -	
40	ZR		+ -		NR	+ -	NR		+ -	
47	AG		+ -		NR	+ -	NR		+ -	
48	CD		+ -		NR	+ -	NR		+ -	
50	SN		+ -		NR	+ -	NR		+ -	
51	SB		+ -		NR	+ -	NR		+ -	
55	CS		+ -		NR	+ -	NR		+ -	
56	BA		+ -		NR	+ -	NR		+ -	
58	CE		+ -		NR	+ -	NR		+ -	
80	HG		+ -		NR	+ -	NR		+ -	
82	PB		+ -		NR	+ -	NR		+ -	
201	OC		+ -		25.900	+ -	NR		+ -	
202	EC		+ -		70.100	+ -	NR		+ -	
203	SO4		+ -		NR	+ -	NR		+ -	
204	NO3		+ -		NR	+ -	NR		+ -	
SUM(%)		0.000			96.000			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON NR: NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : ABOUT 4% LISTED AS "OTHER" COMPONENTS. REF.20

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
34001	20	AIRCRAFT	US EPA "ENGINE-RELATED PARTICULATE	
34001			MATTER-A COMPILATION OF 180 REFERENCES"	CASS PROFILE NO. 55. OBTAINED FROM HEYWOOD,
34001			UNPUBLISHED. PROVIDED BY F. BLACK,USEPA,ESRL.	ET.AL.(1971)
34001			U.S. EPA, ESRL. RTP, NC.(1981).	
34001				

13-Jun-85

SOURCE LIBRARY

SOURCE: TIRE WEAR
SCC: NONE
CONTROLS: NONE

PROFILE: 34002
RANKING: 1124
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
5	B	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
9	F	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
11	NA	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
12	MG	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
13	AL	<	+ -	NR	<	+ -	NR	<	+ -	NR
14	SI	<	+ -	NR	<	+ -	NR	<	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	<	+ -	NR	<	+ -	NR	<	+ -	NR
17	CL	<	+ -	NR	<	+ -	NR	<	+ -	NR
19	K	<	+ -	NR	<	+ -	NR	<	+ -	NR
20	CA	<	+ -	NR	<	+ -	NR	<	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	<	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	<	+ -	NR
26	FE	<	+ -	NR	<	+ -	NR	<	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	<	+ -	NR	<	+ -	NR	<	+ -	NR
30	ZN	1.000	+ -	NR	1.000	+ -	NR	1.000	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	<	+ -	NR
201	OC	21.750	+ -	NR	21.750	+ -	NR	21.750	+ -	NR
202	EC	60.900	+ -	NR	60.900	+ -	NR	60.900	+ -	NR
203	SO4	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
204	NO3	NR	+ -	NR	NR	+ -	NR	NR	+ -	NR
SUM(%)		83.650			83.650			83.650		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COMPOSITE PROFILE DEVELOPED FROM WORK BY PIERSON, WATSON AND MORTON.
REFS. 41,46,53.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
34002	41,46,53	TIRE	W.R. PIERSON AND W.D. BRACHAEZEK,"	COMPOSITE PROFILE DEVELOPED FROM DATA BY
34002		WEAR	PARTICULATE MATTER ASSOCIATED WITH VEHICLES	HORTON MODIFIED TO INCLUDE ZN VALUES FROM
34002			ON THE ROAD II" AEROSOL SCIENCE AND	PIERSON AND EC/OC RATIOS REPORTED BY WATSON.
34002			TECHNOLOGY 2:1 (1983) AND REFS. 53,46	
34002				

D. Area Sources

Series 40000 profiles include crustal, vegetative burning and miscellaneous other area source profiles that have been used in receptor modeling studies.

SOURCE LIBRARY

SOURCE: PAVED ROAD DUST MISSOULA, MONTANA
SCC: NONE
CONTROLS: NONE

PROFILE: 41101
RANKING: 2211
RATING : C

			FINE			COARSE			TSP	
SPECIES NUMBER	SPECIES NAME	********* % BY WT	<2.5 UM + -	****** UNC	********* % BY WT	2.5-10UM +-	****** UNC	********* % BY WT	<30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	0.960	+ -	0.060	0.960	+ -	0.060		+ -	
12	MG	1.000	+ -	0.130	1.000	+ -	0.130		+ -	
13	AL	8.100	+ -	1.000	6.500	+ -	1.000		+ -	
14	SI	23.800	+ -	3.000	28.000	+ -	3.000		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	<	+ -	NR	<	+ -	NR		+ -	
17	CL	0.030	+ -	0.016	0.032	+ -	0.016		+ -	
19	K	2.300	+ -	0.500	2.300	+ -	0.500		+ -	
20	CA	1.700	+ -	0.100	1.700	+ -	0.100		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.260	+ -	0.020	0.260	+ -	0.020		+ -	
23	V	0.004	+ -	0.001	0.004	+ -	0.001		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	0.026	+ -	0.001	0.026	+ -	0.001		+ -	
26	FE	3.200	+ -	0.400	3.200	+ -	0.400		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	0.110	+ -	0.030	0.110	+ -	0.030		+ -	
30	ZN	0.040	+ -	0.010	0.040	+ -	0.010		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.002	+ -	0.001	0.002	+ -	0.001		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.130	+ -	0.020	0.130	+ -	0.020		+ -	
201	OC	10.000	+ -	NR	10.000	+ -	NR		+ -	
202	EC	1.400	+ -	NR	1.400	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		53.062			55.664			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED ; NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : RESUSPENDED PAVED ROAD DUST ANALYZED BY XRF AND CARBON COMBUSTION. REF. 28

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41101	28	PAVED	J. A. COOPER, "MISSOULA MONTANA SOURCE	XRF AND CARBON OXIDATION ANALYSIS OF ROAD
41101		ROAD DUST	APPORTIONMENT STUDY", FINAL REPORT TO THE	DUST SAMPLES COLLECTED IN THE VACINITY OF
41101			MONTANA DEPT. OF PUBLIC HEALTH. NEA. INC.	LION'S PARK. SAMPLE RESUSPENDED THRU A
41101			(1980)	DICHOTOMOUS SAMPLER.
41101				

SOURCE: PAVED ROAD DUST - JUNEAU, ALASKA
SCC: NONE
CONTROLS: NONE

PROFILE: 41102
RANKING: 2221
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		10.900	+ -	0.580	10.900	+ -	0.580
14	SI		+ -		32.800	+ -	1.680	32.800	+ -	1.680
15	P		+ -		0.190	+ -	0.040	0.190	+ -	0.040
16	S		+ -		0.250	+ -	0.060	0.250	+ -	0.060
17	CL		+ -		0.150	+ -	0.020	0.150	+ -	0.020
19	K		+ -		1.460	+ -	0.080	1.460	+ -	0.080
20	CA		+ -		3.290	+ -	0.170	3.290	+ -	0.170
21	SC		+ -		<	+ -	0.000	<	+ -	0.000
22	TI		+ -		0.810	+ -	0.040	0.810	+ -	0.040
23	V		+ -		0.050	+ -	0.000	0.050	+ -	0.000
24	CR		+ -		0.030	+ -	0.000	0.030	+ -	0.000
25	MN		+ -		0.130	+ -	0.000	0.130	+ -	0.000
26	FE		+ -		7.190	+ -	0.370	7.190	+ -	0.370
27	CO		+ -		<	+ -	0.000	<	+ -	0.000
28	NI		+ -		0.010	+ -	0.000	0.010	+ -	0.000
29	CU		+ -		0.010	+ -	0.000	0.010	+ -	0.000
30	ZN		+ -		0.700	+ -	0.000	0.700	+ -	0.000
31	GA		+ -		<	+ -	0.000	<	+ -	0.000
32	GE		+ -		<	+ -	0.000	<	+ -	0.000
33	AS		+ -		<	+ -	0.000	<	+ -	0.000
34	SE		+ -		<	+ -	0.000	<	+ -	0.000
35	BR		+ -		0.020	+ -	0.000	0.020	+ -	0.000
37	RB		+ -		<	+ -	0.000	<	+ -	0.000
38	SR		+ -		0.050	+ -	0.000	0.050	+ -	0.000
40	ZR		+ -		0.010	+ -	0.020	0.010	+ -	0.020
47	AG		+ -		<	+ -	0.000	<	+ -	0.000
48	CD		+ -		<	+ -	0.000	<	+ -	0.000
50	SN		+ -		0.080	+ -	0.030	0.080	+ -	0.030
51	SB		+ -		0.030	+ -	0.040	0.030	+ -	0.040
55	CS		+ -		<	+ -	0.000	<	+ -	0.000
56	BA		+ -		0.280	+ -	0.160	0.280	+ -	0.160
58	CE		+ -		<	+ -	0.000	<	+ -	0.000
80	HG		+ -		<	+ -	0.000	<	+ -	0.000
82	PB		+ -		0.530	+ -	0.030	0.530	+ -	0.030
201	OC		+ -		NA	+ -	NR	NA	+ -	NR
202	EC		+ -		NA	+ -	NR	NA	+ -	NR
203	SO4		+ -		0.750	+ -	0.180	0.750	+ -	0.180
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)		0.000			59.720			59.720		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 19

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41102	19	PAVED	J. A. COOPER AND C. A. FRAZIER,	RESUSPENDED PAVED ROAD DUST FROM JUNEAU.
41102		ROAD DUST	"PRELIMINARY SOURCE APPORTIONMENT OF WINTER	ANALYZED BY XRF, ONLY. COMPOSITE OF 3
41102			PARTICULATE MASS IN JUNEAU, ALASKA, "REPORT	SUBSAMPLES. FINE FRACTION, ONLY.
41102			TO THE ALASKA DEPT. ENVIRON. CONSERV. NEA,	
41102			INC. (1983).	
41102				

SOURCE: PAVED ROAD DUST- LEWISTON, IDAHO
SCC: NONE
CONTROLS: NONE

PROFILE: 41103
RANKING: 3324
RATING : C

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM			COARSE 2.5-10UM			TSP <30 UM		
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	1.300	+ -	0.200	1.600	+ -	0.100	NA	+ -	NR
12	MG	2.200	+ -	0.500	1.600	+ -	0.200	NA	+ -	NR
13	AL	11.600	+ -	0.700	6.900	+ -	0.300	NA	+ -	NR
14	SI	36.000	+ -	2.000	24.000	+ -	1.000	NA	+ -	NR
15	P	<	+ -	NR	<	+ -	NR	NA	+ -	NR
16	S	0.600	+ -	0.100	0.360	+ -	0.020	NA	+ -	NR
17	CL	0.310	+ -	0.070	0.140	+ -	NR	NA	+ -	NR
19	K	1.180	+ -	0.090	1.200	+ -	0.060	NA	+ -	NR
20	CA	2.400	+ -	0.100	2.800	+ -	0.100	NA	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	NA	+ -	NR
22	TI	0.630	+ -	0.040	0.860	+ -	0.040	NA	+ -	NR
23	V	0.020	+ -	0.010	0.030	+ -	NR	NA	+ -	NR
24	CR	0.030	+ -	NR	0.030	+ -	NR	NA	+ -	NR
25	MN	0.120	+ -	0.020	0.130	+ -	NR	NA	+ -	NR
26	FE	5.700	+ -	0.300	6.600	+ -	0.300	NA	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	NA	+ -	NR
28	NI	0.040	+ -	NR	0.010	+ -	NR	NA	+ -	NR
29	CU	0.040	+ -	0.020	0.010	+ -	NR	NA	+ -	NR
30	ZN	0.160	+ -	0.020	0.080	+ -	0.040	NA	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
35	BR	0.020	+ -	NR	<	+ -	NR	NA	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	NA	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
82	PB	0.330	+ -	0.050	0.140	+ -	NR	NA	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		62.680			46.490			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 42

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41103	42	PAVED	J.A. COOPER,"POTLATCH CORPORATION AEROSOL	PAVED ROAD DUST FROM DOWNTOWN LEWISTON
41103		ROAD	CHARACTERIZATION STUDY," FINAL REPORT TO THE	IDAHO RESUSPENCED AND ANALYZED BY XRF.
41103		DUST	POTLATCH CORPORATION BY NEA, INC. SEPT. 1979	
41103				

13-Jun-85

SOURCE LIBRARY

SOURCE: PAVED ROAD DUST- BUTTE, MONTANA
SCC: NONE
CONTROLS: NONE

PROFILE: 41104
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	13.493	+ -	1.349	8.195	+ -	0.819		+ -	
14	SI	34.850	+ -	3.493	23.641	+ -	2.364		+ -	
15	P	0.406	+ -	0.041	0.234	+ -	0.023		+ -	
16	S	1.029	+ -	0.103	0.750	+ -	0.075		+ -	
17	CL	0.173	+ -	0.022	0.127	+ -	0.013		+ -	
19	K	2.374	+ -	0.237	2.330	+ -	0.233		+ -	
20	CA	3.937	+ -	0.394	4.091	+ -	0.409		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.336	+ -	0.037	0.409	+ -	0.041		+ -	
23	V	0.031	+ -	NR	0.028	+ -	NR		+ -	
24	CR	0.032	+ -	NR	0.032	+ -	NR		+ -	
25	MN	0.134	+ -	0.013	0.116	+ -	0.012		+ -	
26	FE	4.354	+ -	0.435	4.052	+ -	0.405		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.013	+ -	NR	<	+ -	NR		+ -	
29	CU	0.327	+ -	0.033	0.302	+ -	0.030		+ -	
30	ZN	0.254	+ -	0.025	2.100	+ -	0.021		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.023	+ -	NR	0.016	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	0.015	+ -	NR		+ -	
38	SR	0.027	+ -	NR	0.035	+ -	NR		+ -	
42	MO	<	+ -	NR	0.020	+ -	NR		+ -	
46	PD	0.023	+ -	0.014	<	+ -	NR		+ -	
47	AG	<	+ -	0.018	<	+ -	NR		+ -	
48	CD	<	+ -	0.026	<	+ -	NR		+ -	
50	SN	<	+ -	0.032	<	+ -	NR		+ -	
51	SB	0.091	+ -	0.057	0.019	+ -	NR		+ -	
49	IN	<	+ -	0.029	<	+ -	NR		+ -	
56	BA	<	+ -	0.162	<	+ -	0.024		+ -	
57	LA	<	+ -	NR	<	+ -	0.035		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.178	+ -	0.018	0.125	+ -	0.012		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		62.085			46.637			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : NEAR A COPPER MINING AND CONCENTRATING OPERATION. REF. 44.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41104	44	PAVED	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	PAVED CITY STREET NEAR COPPER MINE AND
41104		ROAD	CHEMICAL MASS BALANCE,"STATE OF MONTANA	CONCENTRATING PLANT. BULK SAMPLE SIEVED AND
41104		DUST	DEPT. HEALTH AND ENVIR. SCIENCES (1982)	RESUSPENDED.
41104				

21-Jun-85

SOURCE LIBRARY

SOURCE: PAVED ROAD DUST-EAST HELENA, MONTANA
SCC: NONE
CONTROLS: NONE

PROFILE: 41105
RANKING: 3321
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	8.821	+ -	0.882	7.415	+ -	0.741	5.586	+ -	0.559
14	SI	26.334	+ -	2.633	25.299	+ -	2.530	19.943	+ -	1.994
15	P	0.287	+ -	0.040	0.217	+ -	0.022	0.131	+ -	0.013
16	S	2.076	+ -	0.251	1.310	+ -	0.131	0.856	+ -	0.086
17	CL	0.373	+ -	0.061	0.134	+ -	0.017	0.063	+ -	0.012
19	K	1.560	+ -	0.156	1.724	+ -	0.172	1.216	+ -	0.122
20	CA	5.859	+ -	0.586	6.973	+ -	0.697	5.583	+ -	0.558
22	TI	0.349	+ -	0.035	0.397	+ -	0.040	0.309	+ -	0.031
23	V	0.023	+ -	NR	0.024	+ -	NR	0.018	+ -	NR
24	CR	<	+ -	NR	0.024	+ -	NR	0.018	+ -	NR
25	MN	0.140	+ -	0.015	0.137	+ -	0.014	0.106	+ -	0.011
26	FE	3.885	+ -	0.388	4.341	+ -	0.434	3.109	+ -	0.311
28	NI	<	+ -	NR	0.014	+ -	NR	0.011	+ -	NR
29	CU	0.382	+ -	0.038	0.507	+ -	0.051	0.503	+ -	0.050
30	ZN	1.289	+ -	0.129	0.841	+ -	0.084	0.590	+ -	0.059
33	AS	0.342	+ -	0.052	0.212	+ -	0.021	0.153	+ -	0.015
34	SE	0.011	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.108	+ -	0.013	0.029	+ -	NR	0.023	+ -	NR
38	SR	0.022	+ -	NR	0.035	+ -	NR	0.026	+ -	NR
46	PD	<	+ -	0.027	<	+ -	NR	<	+ -	NR
47	AG	0.024	+ -	0.043	0.011	+ -	NR	<	+ -	NR
48	CD	0.226	+ -	0.068	0.090	+ -	0.015	0.040	+ -	NR
49	IN	<	+ -	0.069	<	+ -	0.014	0.023		NR
50	SN	0.048	+ -	0.079	0.034	+ -	0.016	0.028	+ -	0.011
51	SB	0.123	+ -	0.147	0.082	+ -	0.031	0.055	+ -	0.022
56	BA	0.099	+ -	0.376	0.076	+ -	0.074	<	+ -	0.052
80	HG	0.015	+ -	0.012	<	+ -	NR	<	+ -	NR
82	PB	2.473	+ -	0.247	1.909	+ -	0.191	1.507	+ -	0.151
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		54.869			51.835			39.897		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : NEAR LEAD AND ZINC OXIDE PLANTS - E. HELENA, MT. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41105	43	PAVED	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	PAVED ROAD DUST COLLECTED NEAR A PRIMARY
41105		ROAD DUST	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	LEAD SMELTER AND ZINC AND COPPER OXIDE
41105		MONTANA	THE STATE OF MONTANA. NEA, INC.(1982)	MANUFACTURING PLANTS. SAMPLES SIEVED AND
41105				RESUSPENDED.
41105				

SOURCE: PAVED ROAD DUST - MEDFORD, OR.
SCC: NONE
CONTROLS: NOT APPLICABLE

PROFILE: 41106
RANKING: 3328
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	2.000	+ -	0.300	2.000	+ -	0.300		+ -	
12	MG	2.000	+ -	0.300	1.900	+ -	0.100		+ -	
13	AL	8.100	+ -	0.300	8.200	+ -	0.500		+ -	
14	SI	23.800	+ -	1.300	24.800	+ -	1.300		+ -	
15	P	NA	+ -	NR	NA	+ -	NR		+ -	
16	S	0.400	+ -	0.100	0.320	+ -	0.200		+ -	
17	CL	0.040	+ -	NR	NA	+ -	NR		+ -	
19	K	0.920	+ -	0.080	0.830	+ -	0.080		+ -	
20	CA	2.500	+ -	1.100	2.400	+ -	1.200		+ -	
21	SC	NA	+ -	NR	NA	+ -	NR		+ -	
22	TI	0.650	+ -	0.110	0.540	+ -	0.060		+ -	
23	V	0.023	+ -	NR	0.031	+ -	NR		+ -	
24	CR	0.026	+ -	NR	0.026	+ -	NR		+ -	
25	MN	0.110	+ -	NR	0.120	+ -	0.020		+ -	
26	FE	4.900	+ -	0.400	4.700	+ -	0.400		+ -	
27	CO	NA	+ -	NR	NA	+ -	NR		+ -	
28	NI	0.010	+ -	NR	0.100	+ -	NR		+ -	
29	CU	0.040	+ -	0.030	0.080	+ -	0.090		+ -	
30	ZN	0.050	+ -	NR	0.040	+ -	0.020		+ -	
31	GA	NA	+ -	NR	NA	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	NA	+ -	NR	NA	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	NA	+ -	NR	NA	+ -	NR		+ -	
47	AG	NA	+ -	NR	NA	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	NA	+ -	NR	NA	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	NA	+ -	NR	NA	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.130	+ -	0.040	0.090	+ -	0.040		+ -	
201	OC	10.000	+ -	2.000	8.700	+ -	1.900		+ -	
202	EC	1.400	+ -	0.500	1.600	+ -	0.800		+ -	
203	SO4	0.240	+ -	0.170	0.230	+ -	0.120		+ -	
204	NO3	0.100	+ -	0.030	NA	+ -	NR		+ -	
SUM(%)		57.039			56.387			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 45.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41106	45	PAVED	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	COMPOSITE ROAD DUST FROM MEDFORD, OREGON
41106		ROAD DUST	CHARACTERIZATION STUDY," REPORT TO THE	RESUSPENDED AND SAMPLED WITH A DICHOTOMOUS
41106			OREGON DEPT. ENVIRON. QUALITY. OREGON	SAMPLER.
41106			GRADUATE CENTER (1980)	
41106				

SOURCE: PAVED ROAD DUST-PORTLAND, OR.
SCC: NONE
CONTROLS: NONE

PROFILE: 41107
RANKING: 3338
RATING : A

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM +-	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	0.010	0.008	+ -	0.007		+ -	
11	NA	1.250	+ -	0.340	1.750	+ -	0.091		+ -	
12	MG	1.300	+ -	0.270	1.540	+ -	0.140		+ -	
13	AL	8.840	+ -	2.710	6.600	+ -	0.700		+ -	
14	SI	22.300	+ -	1.100	28.400	+ -	0.790		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.370	+ -	0.140	<	+ -	0.020		+ -	
17	CL	<	+ -	0.010	<	+ -	0.020		+ -	
19	K	1.030	+ -	0.060	1.030	+ -	0.058		+ -	
20	CA	2.440	+ -	0.400	3.000	+ -	0.220		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.640	+ -	0.120	1.010	+ -	0.180		+ -	
23	V	0.023	+ -	0.005	0.027	+ -	0.005		+ -	
24	CR	0.045	+ -	0.017	0.045	+ -	0.017		+ -	
25	MN	0.123	+ -	0.017	0.100	+ -	0.011		+ -	
26	FE	6.000	+ -	0.600	5.730	+ -	0.290		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.009	+ -	0.003	0.004	+ -	0.003		+ -	
29	CU	0.030	+ -	0.012	0.030	+ -	0.012		+ -	
30	ZN	0.110	+ -	0.037	0.110	+ -	0.037		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.020	+ -	0.006	0.008	+ -	0.009		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.370	+ -	0.150	0.370	+ -	0.150		+ -	
201	OC	11.800	+ -	4.300	3.340	+ -	0.980		+ -	
202	EC	1.850	+ -	0.910	1.550	+ -	0.780		+ -	
203	SO4	0.420	+ -	0.310	0.074	+ -	0.045		+ -	
204	NO3	NA	+ -	NR	0.020	+ -	0.010		+ -	
SUM(%)		58.970			54.746			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 46. OC,EC DATA UPDATED BY SHAH (REF. 54)

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41107	46	PAVED	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	COMPOSITE ROAD DUST SAMPLE FROM PORTLAND,
41107		ROAD DUST	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	OREGON. RESUSPENDED AND SAMPLED WITH A
41107			FINE AND TOTAL SUSPENDED PARTICULATE MATTER	TWO-STAGE VIRTUAL IMPACTOR.
41107			IN PORTLAND,OREGON," PHD THESIS. OREGON	
41107			GRADUATE CENTER(1979)	
41107			AND	PROFILES DEVELOPED DURING THE PACS STUDY
41107			JITENDRA J. SHAH,"MEASUREMENTS OF	WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
41107			CARBONACEOUS AEROSOL ACROSS THE U.S.: SOURCES	(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
41107			AND ROLE IN VISIBILITY DEGREDATION,"PHD	NO DILUTION AIR. UPPER CUT POINT ABOUT 20
41107			THESIS,OREGON GRADUATE CENTER. MAY,1981.	UM,D50. ANALYSIS BY XRF AND INNA, IC AND
41107			TABLE A.2.	CARBON OXIDATION (CORRECTED FOR ARTIFACT EC).
41107				SINCE NO DILUTION AIR WAS USED DURING
41107				SAMPLING, THE PACS PROFILES TEND TO
41107				UNDERESTIMATE ORGANIC CARBON.
41107				

SOURCE: PAVED ROAD DUST - ALABAMA
SCC: NONE
CONTROLS: NOT APPLICABLE

PROFILE: 41109
RANKING: 2321
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	9.280	+ -	2.970	6.320	+ -	1.200		+ -	
14	SI	19.700	+ -	6.200	23.900	+ -	4.800		+ -	
15	P	0.123	+ -	0.104	0.239	+ -	0.048		+ -	
16	S	0.800	+ -	0.384	0.612	+ -	0.120		+ -	
17	CL	0.247	+ -	0.163	0.230	+ -	0.046		+ -	
19	K	0.494	+ -	0.174	0.595	+ -	0.120		+ -	
20	CA	3.150	+ -	1.090	7.990	+ -	1.600		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.444	+ -	0.147	0.466	+ -	0.094		+ -	
23	V	0.030	+ -	0.022	0.014	+ -	0.004		+ -	
24	CR	0.270	+ -	0.025	0.023	+ -	0.004		+ -	
25	MN	0.080	+ -	0.035	0.070	+ -	0.014		+ -	
26	FE	3.140	+ -	1.010	2.750	+ -	0.560		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	0.023	0.013	+ -	0.003		+ -	
29	CU	<	+ -	0.026	0.016	+ -	0.004		+ -	
30	ZN	0.090	+ -	0.037	0.119	+ -	0.024		+ -	
31	GA	0.005	+ -	0.017	<	+ -	0.002		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	0.055	<	+ -	0.008		+ -	
34	SE	0.010	+ -	0.018	0.001	+ -	0.002		+ -	
35	BR	0.036	+ -	0.027	0.013	+ -	0.003		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.187	+ -	0.103	0.163	+ -	0.032		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		37.286			42.922			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :REF. 48

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41109	48	PAVED	J.A. COOPER,"DETERMINATION OF SOURCE	SOUTHEASTERN U.S. ROAD DUST RESUSPENDED AND
41109		ROAD DUST	CONTRIBUTIONS TO FINE AND COURSE SUSPENDED	SAMPLED WITH A DICHOTOMOUS SAMPLER.
41109			PARTICULATE LEVELS IN PETERSVILLE, ALABAMA,"	
41109			REPORT TO TVA. NEA,INC. (1981)	
41109			-	

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13-Jun-85                                        SOURCE LIBRARY

              SOURCE:   PAVED ROAD DUST - SPOKANE, WA                                    PROFILE:     41110
              SCC:      NONE                                                             RANKING:      3321
              CONTROLS: NONE                                                             RATING :         B
-----------------------------------------------------------------------------------------------------------
                                     FINE                                COARSE                                  TSP
SPECIES    SPECIES   *********   <2.5 UM   ******     *********   2.5-10UM  ******      *********   <30 UM  ******
NUMBER      NAME      % BY WT     + -       UNC        % BY WT      +-       UNC         % BY WT     +-      UNC
-------     -----   ---------   -------   -----     ---------   --------  ------      ---------   -----   ------
      4      BE         NA        + -        NR          NA         + -        NR                     + -
      5      B          NA        + -        NR          NA         + -        NR                     + -
      9      F          NA        + -        NR          NA         + -        NR                     + -
     11      NA         NA        + -        NR          NA         + -        NR                     + -
     12      MG        1.870      + -      0.150       1.870        + -      0.150                    + -
     13      AL       11.010      + -      0.780      11.010        + -      0.780                    + -
     14      SI       27.970      + -      1.930      27.970        + -      1.930                    + -
     15      P         0.300      + -      0.030       0.300        + -      0.030                    + -
     16      S         0.370      + -      0.100       0.370        + -      0.100                    + -
     17      CL        0.110      + -      0.050       0.110        + -      0.050                    + -
     19      K         1.540      + -      0.130       1.540        + -      0.130                    + -
     20      CA        0.790      + -      0.070       0.790        + -      0.070                    + -
     21      SC         <         + -        NR          <          + -        NR                     + -
     22      TI        0.440      + -      0.040       0.440        + -      0.040                    + -
     23      V         0.020      + -        NR        0.020        + -        NR                     + -
     24      CR         <         + -        NR          <          + -        NR                     + -
     25      MN        0.240      + -      0.020       0.240        + -      0.020                    + -
     26      FE        5.280      + -      0.370       5.280        + -      0.370                    + -
     27      CO         <         + -        NR          <          + -        NR                     + -
     28      NI        0.010      + -        NR        0.010        + -        NR                     + -
     29      CU        0.020      + -        NR        0.020        + -        NR                     + -
     30      ZN        0.030      + -        NR        0.030        + -        NR                     + -
     31      GA         <         + -        NR          <          + -        NR                     + -
     32      GE         <         + -        NR          <          + -        NR                     + -
     33      AS         <         + -        NR          <          + -        NR                     + -
     34      SE         <         + -        NR          <          + -        NR                     + -
     35      BR         <         + -        NR          <          + -        NR                     + -
     37      RB         <         + -        NR          <          + -        NR                     + -
     38      SR        0.010      + -        NR        0.010        + -        NR                     + -
     40      ZR         <         + -        NR          <          + -        NR                     + -
     47      AG         <         + -        NR          <          + -        NR                     + -
     48      CD        0.050      + -      0.060       0.050        + -      0.060                    + -
     50      SN         <         + -        NR          <          + -        NR                     + -
     51      SB         <         + -        NR          <          + -        NR                     + -
     55      CS         <         + -        NR          <          + -        NR                     + -
     56      BA         <         + -        NR          <          + -        NR                     + -
     58      CE         <         + -        NR          <          + -        NR                     + -
     80      HG         <         + -        NR          <          + -        NR                     + -
     82      PB        0.110      + -      0.020       0.110        + -      0.020                    + -
    201      OC         NA        + -        NR          NA         + -        NR                     + -
    202      EC         NA        + -        NR          NA         + -        NR                     + -
    203      SO4        NA        + -        NR          NA         + -        NR                     + -
    204      NO3        NA        + -        NR          NA         + -        NR                     + -
SUM( % )              49.800                          49.800                                0.000

NOTES:   OC = ORGANIC CARBON :  EC = ELEMENTAL CARBON :  NA = NOT ANALYZED :  NR = NOT REPORTED
         < = LESS THAN DETECTION LIMIT
         OTHER NOTES : REF. 27.
```

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41110	27	PAVED	J.E CORE, ET. AL., "A STUDY OF RESIDENTIAL	RESUSPENDED PAVED ROAD DUST ANALYZED BY XRF.
41110		ROAD	WOOD COMBUSTION TASK 1-AMBIENT AIR QUALITY	SPOKANE,WASHINGTON
41110		DUST	IMPACT ANALYSIS ,"REPORT PREPARED FOR US	
41110			EPA REGION X BY NEA, INC. (1982).	
41110				

SOURCE: UNPAVED ROAD DUST (COPPER MINE)
SCC: NONE
CONTROLS: NOT APPLICABLE

PROFILE: 41201
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM +-	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	<	+ -	NR	<	+ -	NR		+ -	
13	AL	14.618	+ -	1.462	10.448	+ -	1.045		+ -	
14	SI	28.738	+ -	2.874	22.471	+ -	2.247		+ -	
15	P	0.282	+ -	0.028	0.218	+ -	0.022		+ -	
16	S	1.532	+ -	0.153	1.817	+ -	0.182		+ -	
17	CL	0.215	+ -	0.021	0.185	+ -	0.018		+ -	
19	K	3.204	+ -	0.320	3.097	+ -	0.310		+ -	
20	CA	3.420	+ -	0.342	4.028	+ -	0.403		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.331	+ -	0.033	0.402	+ -	0.040		+ -	
23	V	0.030	+ -	NR	0.031	+ -	NR		+ -	
24	CR	0.025	+ -	NR	0.023	+ -	NR		+ -	
25	MN	0.186	+ -	0.019	0.160	+ -	0.016		+ -	
26	FE	4.371	+ -	0.437	4.441	+ -	0.444		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	0.012	+ -	NR		+ -	
29	CU	1.436	+ -	0.144	1.431	+ -	0.143		+ -	
30	ZN	0.535	+ -	0.053	0.546	+ -	0.055		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.046	+ -	NR	0.065	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	0.019	+ -	NR		+ -	
38	SR	0.024	+ -	NR	0.034	+ -	NR		+ -	
40	Y	<	+ -	NR	<	+ -	NR		+ -	
47	ZR	<	+ -	NR	<	+ -	NR		+ -	
48	MO	<	+ -	NR	0.029	+ -	NR		+ -	
50	PD	<	+ -	NR	<	+ -	NR		+ -	
51	AG	<	+ -	NR	<	+ -	NR		+ -	
55	CD	<	+ -	NR	<	+ -	NR		+ -	
56	IN	<	+ -	NR	<	+ -	NR		+ -	
58	SN	<	+ -	NR	<	+ -	NR		+ -	
80	SB	<	+ -	0.016	<	+ -	NR		+ -	
82	BA	<	+ -	0.012	0.023	+ -	0.022		+ -	
201	LA	NA	+ -	NR	NA	+ -	NR		+ -	
202	HG	NA	+ -	NR	NA	+ -	NR		+ -	
203	PB	0.117	+ -	0.012	0.100	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		59.110			49.580			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : UNPAVED ROAD DUST IN A COPPER MINING AND CONCENTRATING PLANT COMPLEX.
REF. 44.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41201	44	SOIL DUST	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	UNPAVED ROAD ON COPPER MINING AND
41201		MONTANA	CHEMICAL MASS BALANCE,"STATE OF MONTANA	CONCENTRATING PLANT COMPLEX. BULK SAMPLE
41201			DEPT. HEALTH AND ENVIR. SCIENCES (1982)	SIEVED AND RESUSPENDED.
41201				

SOURCE: UNPAVED ROAD DUST - HAUL ROAD
SCC: 3-03-024-04
CONTROLS: NONE

PROFILE: 41203
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	17.765	+ -	1.776	12.872	+ -	1.287		+ -	
14	SI	34.358	+ -	3.436	25.981	+ -	2.598		+ -	
15	P	0.427	+ -	0.043	0.241	+ -	0.024		+ -	
16	S	2.810	+ -	0.281	2.277	+ -	0.228		+ -	
17	CL	0.726	+ -	0.073	0.496	+ -	0.050		+ -	
19	K	3.504	+ -	0.350	3.554	+ -	0.355		+ -	
20	CA	1.128	+ -	0.113	1.671	+ -	0.167		+ -	
49	IN	0.045	+ -	0.038	<	+ -	NR		+ -	
22	TI	0.420	+ -	0.042	0.501	+ -	0.050		+ -	
23	V	0.035	+ -	NR	0.035	+ -	NR		+ -	
24	CR	0.027	+ -	NR	0.021	+ -	NR		+ -	
25	MN	0.288	+ -	0.029	0.255	+ -	0.025		+ -	
26	FE	4.364	+ -	0.436	3.779	+ -	0.378		+ -	
46	PD	<	+ -	0.017	<	+ -	NR		+ -	
28	NI	0.012	+ -	NR	<	+ -	NR		+ -	
29	CU	1.393	+ -	0.139	0.989	+ -	0.099		+ -	
30	ZN	0.568	+ -	0.057	0.504	+ -	0.050		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.030	+ -	NR	0.016	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.014	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	0.020	+ -	NR		+ -	
38	SR	0.029	+ -	NR	0.029	+ -	NR		+ -	
39	Y	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	0.024	<	+ -	NR		+ -	
48	CD	0.034	+ -	0.036	<	+ -	NR		+ -	
50	SN	<	+ -	0.044	<	+ -	NR		+ -	
51	SB	<	+ -	0.080	<	+ -	0.018		+ -	
56	BA	0.274	+ -	0.214	0.064	+ -	0.049		+ -	
57	LA	<	+ -	NR	<	+ -	0.076		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.170	+ -	0.018	0.102	+ -	0.010		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		68.421			53.407			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COPPER MINING HAUL ROAD. REF 44.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41202	44	SOIL DUST	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	UNPAVED ROAD NEAR A COPPER ORE
41202		MONTANA	CHEMICAL MASS BALANCE,"STATE OF MONTANA	CONCENTRATOR. BULK SAMPLE SIEVED AND
41202			DEPT. HEALTH AND ENVIR. SCIENCES (1982)	RESUSPENDED.
41202				

21-Jun-85

SOURCE LIBRARY

SOURCE: UNPAVED ROAD DUST - HAUL ROAD
SCC: 3-03-024-04
CONTROLS: NONE

PROFILE: 41203
RANKING: 2311
RATING : D

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	17.765	+ -	1.776	12.872	+ -	1.287		+ -	
14	SI	34.358	+ -	3.436	25.981	+ -	2.598		+ -	
15	P	0.427	+ -	0.043	0.241	+ -	0.024		+ -	
16	S	2.810	+ -	0.281	2.277	+ -	0.228		+ -	
17	CL	0.726	+ -	0.073	0.496	+ -	0.050		+ -	
19	K	3.504	+ -	0.350	3.554	+ -	0.355		+ -	
20	CA	1.128	+ -	0.113	1.671	+ -	0.167		+ -	
49	IN	0.045	+ -	0.038	<	+ -	NR		+ -	
22	TI	0.420	+ -	0.042	0.501	+ -	0.050		+ -	
23	V	0.035	+ -	NR	0.035	+ -	NR		+ -	
24	CR	0.027	+ -	NR	0.021	+ -	NR		+ -	
25	MN	0.288	+ -	0.029	0.255	+ -	0.025		+ -	
26	FE	4.364	+ -	0.436	3.779	+ -	0.378		+ -	
46	PD	<	+ -	0.017	<	+ -	NR		+ -	
28	NI	0.012	+ -	NR	<	+ -	NR		+ -	
29	CU	1.393	+ -	0.139	0.989	+ -	0.099		+ -	
30	ZN	0.568	+ -	0.057	0.504	+ -	0.050		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
33	AS	0.030	+ -	NR	0.016	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.014	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	0.020	+ -	NR		+ -	
38	SR	0.029	+ -	NR	0.029	+ -	NR		+ -	
39	Y	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	0.024	<	+ -	NR		+ -	
48	CD	0.034	+ -	0.036	<	+ -	NR		+ -	
50	SN	<	+ -	0.044	<	+ -	NR		+ -	
51	SB	<	+ -	0.080	<	+ -	0.018		+ -	
56	BA	0.274	+ -	0.214	0.064	+ -	0.049		+ -	
57	LA	<	+ -	NR	<	+ -	0.076		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.170	+ -	0.018	0.102	+ -	0.010		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		68.421			53.407			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : COPPER MINING HAUL ROAD. REF 44.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41203	44	SOIL DUST	D. MAUGHN,"BUTTE SOURCE APPORTIONMENT STUDY:	UNPAVED COPPER MINING HAUL ROAD. BULK
41203		HAUL ROAD	CHEMICAL MASS BALANCE,"STATE OF MONTANA	SAMPLE SIEVED AND RESUSPENDED.
41203			DEPT. HEALTH AND ENVIR. SCIENCES (1982)	
41203				

SOURCE: UNPAVED ROAD DUST-EAST HELENA, MONTANA
SCC: NONE
CONTROLS: NONE

PROFILE: 41204
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	**********	FINE <2.5 UM	******	**********	COARSE 2.5-10UM	******	**********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	13.343	+ -	1.334	9.347	+ -	0.935	9.937	+ -	0.994
14	SI	37.418	+ -	3.742	29.370	+ -	2.937	32.679	+ -	3.268
15	P	0.224	+ -	0.025	0.149	+ -	0.015	0.154	+ -	0.015
16	S	0.419	+ -	0.060	0.248	+ -	0.025	0.236	+ -	0.024
17	CL	0.181	+ -	0.028	0.113	+ -	0.011	0.125	+ -	0.012
19	K	1.725	+ -	0.172	2.139	+ -	0.214	2.242	+ -	0.224
20	CA	6.194	+ -	0.619	3.994	+ -	0.399	3.854	+ -	0.385
22	TI	0.741	+ -	0.074	0.433	+ -	0.043	0.473	+ -	0.047
23	V	0.039	+ -	NR	0.016	+ -	NR	0.023	+ -	NR
24	CR	0.021	+ -	NR	0.019	+ -	NR	0.021	+ -	NR
25	MN	0.049	+ -	NR	0.040	+ -	NR	0.037	+ -	NR
26	FE	2.340	+ -	0.234	2.158	+ -	0.216	2.213	+ -	0.221
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	0.013	+ -	NR	0.014	+ -	NR	0.024	+ -	NR
30	ZN	0.028	+ -	NR	0.030	+ -	NR	0.029	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.027	+ -	NR	0.033	+ -	NR	0.037	+ -	NR
46	PD	0.052	+ -	0.019	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	0.025	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	0.039	<	+ -	NR	<	+ -	NR
49	IN	<	+ -	0.042	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	0.046	<	+ -	NR	<	+ -	NR
51	SB	0.028	+ -	0.089	<	+ -	0.014	0.011	+ -	0.015
56	BA	0.320	+ -	0.250	0.306	+ -	0.047	0.270	+ -	0.051
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.042	+ -	0.014	0.027	+ -	NR	0.035	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		63.204			48.436					

NOTES: OC= ORGANIC CARBON: EC = ELEMENTAL CARBON: NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41204	43	SOIL DUST	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	UNPAVED ROAD DUST COLLECTED NEAR A PRIMARY
41204		MONTANA	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	LEAD SMELTER AND ZINC AND COPPER OXIDE
41204			THE STATE OF MONTANA. NEA, INC.(1982)	MANUFACTURING PLANTS. SAMPLES SIEVED AND
41204				RESUSPENDED.
41204				

SOURCE: SOIL DUST - DES MOINES, IOWA
SCC: NONE
CONTROLS: NONE

PROFILE: 41301
RANKING: 2332
RATING : C

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		3.717	+ -	NR	3.717	+ -	NR
14	SI		+ -		15.631	+ -	NR	15.631	+ -	NR
15	P		+ -		0.108	+ -	NR	0.108	+ -	NR
16	S		+ -		0.746	+ -	NR	0.746	+ -	NR
17	CL		+ -		0.192	+ -	NR	0.192	+ -	NR
19	K		+ -		0.596	+ -	NR	0.596	+ -	NR
20	CA		+ -		10.007	+ -	NR	10.007	+ -	NR
21	SC		+ -		<	+ -	NR	<	+ -	NR
22	TI		+ -		0.197	+ -	NR	0.197	+ -	NR
23	V		+ -		0.017	+ -	NR	0.017	+ -	NR
24	CR		+ -		0.017	+ -	NR	0.017	+ -	NR
25	MN		+ -		0.092	+ -	NR	0.092	+ -	NR
26	FE		+ -		3.950	+ -	NR	3.950	+ -	NR
27	CO		+ -		<	+ -	NR	<	+ -	NR
28	NI		+ -		0.006	+ -	NR	0.006	+ -	NR
29	CU		+ -		0.027	+ -	NR	0.027	+ -	NR
30	ZN		+ -		0.044	+ -	NR	0.044	+ -	NR
31	GA		+ -		<	+ -	NR	<	+ -	NR
32	GE		+ -		<	+ -	NR	<	+ -	NR
33	AS		+ -		0.009	+ -	NR	0.009	+ -	NR
34	SE		+ -		<	+ -	NR	<	+ -	NR
35	BR		+ -		0.006	+ -	NR	0.006	+ -	NR
37	RB		+ -		<	+ -	NR	<	+ -	NR
38	SR		+ -		0.028	+ -	NR	0.028	+ -	NR
40	ZR		+ -		<	+ -	NR	<	+ -	NR
47	AG		+ -		<	+ -	NR	<	+ -	NR
48	CD		+ -		<	+ -	NR	<	+ -	NR
50	SN		+ -		<	+ -	NR	<	+ -	NR
51	SB		+ -		0.001	+ -	NR	0.001	+ -	NR
55	CS		+ -		<	+ -	NR	<	+ -	NR
56	BA		+ -		0.033	+ -	NR	0.033	+ -	NR
58	CE		+ -		<	+ -	NR	<	+ -	NR
80	HG		+ -		<	+ -	NR	<	+ -	NR
82	PB		+ -		0.066	+ -	NR	0.066	+ -	NR
200	TC		+ -		1.962	+ -	NR	1.962	+ -	NR
205	CO3		+ -		24.651	+ -	NR	24.651	+ -	NR
203	SO4		+ -		NA	+ -	NR	NA	+ -	NR
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)					62.103			62.103		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : UNCERTAINTIES 10% OF VALUE. RESUSPENDED SOILS; COMPOSITE OF 3 SAMPLES PER CITY. REF. 26

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41301	26	SOIL DUST	J.E CORE, ET. AL., "IOWA SOURCE	XRF, C,CO3 ANALYSIS OF RESUSPENDED SOILS
41301		IOWA	APPORTIONMENT STUDY," REPORT TO US EPA	FROM IOWA CITIES. DATA NORMALIZED TO 90% OF
41301			REGION VII BY NEA,INC (1982).	MASS (MINOR CORRECTIONS). EACH SOIL SAMPLE
41301				WAS A COMPOSITE OF 3 SUBSAMPLES.
41301				

13-Jun-85

SOURCE LIBRARY

SOURCE: SOIL DUST - SEATTLE, WASHINGTON
SCC: NONE
CONTROLS: NONE

PROFILE: 41302
RANKING: 3334
RATING : C

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR		+ -			+ -	
5	B	NA	+ -	NR		+ -			+ -	
9	F	NA	+ -	NR		+ -			+ -	
11	NA	NA	+ -	NR		+ -			+ -	
12	MG	1.280	+ -	0.108		+ -			+ -	
13	AL	11.120	+ -	0.743		+ -			+ -	
14	SI	27.336	+ -	1.780		+ -			+ -	
15	P	0.336	+ -	0.031		+ -			+ -	
16	S	0.380	+ -	0.088		+ -			+ -	
17	CL	0.024	+ -	0.035		+ -			+ -	
19	K	0.719	+ -	0.066		+ -			+ -	
20	CA	0.864	+ -	0.070		+ -			+ -	
21	SC	<	+ -	NR		+ -			+ -	
22	TI	0.440	+ -	0.038		+ -			+ -	
23	V	0.039	+ -	0.009		+ -			+ -	
24	CR	<	+ -	NR		+ -			+ -	
25	MN	0.144	+ -	0.014		+ -			+ -	
26	FE	4.989	+ -	0.340		+ -			+ -	
27	CO	<	+ -	NR		+ -			+ -	
28	NI	<	+ -	NR		+ -			+ -	
29	CU	0.008	+ -	0.006		+ -			+ -	
30	ZN	0.042	+ -	0.008		+ -			+ -	
31	GA	<	+ -	NR		+ -			+ -	
32	GE	<	+ -	NR		+ -			+ -	
33	AS	<	+ -	NR		+ -			+ -	
34	SE	<	+ -	NR		+ -			+ -	
35	BR	<	+ -	NR		+ -			+ -	
37	RB	<	+ -	NR		+ -			+ -	
38	SR	0.021	+ -	0.008		+ -			+ -	
40	ZR	<	+ -	NR		+ -			+ -	
47	AG	<	+ -	NR		+ -			+ -	
48	CD	0.039	+ -	0.055		+ -			+ -	
50	SN	<	+ -	NR		+ -			+ -	
51	SB	<	+ -	NR		+ -			+ -	
55	CS	<	+ -	NR		+ -			+ -	
56	BA	<	+ -	NR		+ -			+ -	
58	CE	<	+ -	NR		+ -			+ -	
80	HG	<	+ -	NR		+ -			+ -	
82	PB	0.107	+ -	0.022		+ -			+ -	
201	OC	NA	+ -	NR		+ -			+ -	
202	EC	NA	+ -	NR		+ -			+ -	
203	SO4	NA	+ -	NR		+ -			+ -	
204	NO3	NA	+ -	NR		+ -			+ -	
SUM(%)		47.888			0.000			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : RESUSPENDED LOCAL SOIL SAMPLES, FINE FRACTION, ONLY. EACH ANALYZED SAMPLE IS A COMPOSITE OF THREE SOIL SAMPLES. REF. 27

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13-Jun-85                                  SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE   |                  REFERENCE                  |               REFERENCE ABSTRACT               |
NUMBER |NUMBER   |GROUP    |                                             |                                                |
-----------------------------------------------------------------------------------------------------------------------|
 41302 |       27 |SOIL DUST|J.E. CORE, ET.AL.,"A STUDY OF RESIDENTIAL    |SOIL SAMPLES COLLECTED IN THE VACINITY OF       |
 41302 |          |WASHINGTONWOOD COMBUSTION TASK 1: AMBIENT AIR QUALITY |AIR SAMPLING SITES. RESUSPENDED THRU A          |
 41302 |          |         |IMPACT ANALYSIS," REPORT PREPARED FOR EPA    |DICHOTOMOUS IMPACTOR AND ANALYZED BY XRF AND    |
 41302 |          |         |REGION X BY NEA, INC. (1982)                 |CARBON OXIDATION METHODS. NA,MG BY INNA.        |
 41302 |          |         |                                             |                                                |
```

SOURCE: SOIL DUST - VISALIA, CALIFORNIA
SCC: NONE
CONTROLS: NONE

PROFILE: 41303
RANKING: UNKNOWN
RATING : D

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NR	+ -	NR
5	B		+ -			+ -		NR	+ -	NR
9	F		+ -			+ -		NR	+ -	NR
11	NA		+ -			+ -		1.200	+ -	NR
12	MG		+ -			+ -		0.400	+ -	NR
13	AL		+ -			+ -		5.000	+ -	NR
14	SI		+ -			+ -		19.700	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		0.300	+ -	NR
17	CL		+ -			+ -		0.200	+ -	NR
19	K		+ -			+ -		1.500	+ -	NR
20	CA		+ -			+ -		2.500	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.200	+ -	NR
23	V		+ -			+ -		0.050	+ -	NR
24	CR		+ -			+ -		0.050	+ -	NR
25	MN		+ -			+ -		0.050	+ -	NR
26	FE		+ -			+ -		3.000	+ -	NR
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.050	+ -	NR
29	CU		+ -			+ -		0.050	+ -	NR
30	ZN		+ -			+ -		0.050	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		<	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.050	+ -	NR
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		<	+ -	NR
50	SN		+ -			+ -		<	+ -	NR
51	SB		+ -			+ -		<	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		0.300	+ -	NR
58	CE		+ -			+ -		0.300	+ -	NR
80	HG		+ -			+ -		0.300	+ -	NR
82	PB		+ -			+ -		0.200	+ -	NR
201	OC		+ -			+ -		NR	+ -	NR
202	EC		+ -			+ -		NR	+ -	NR
203	SO4		+ -			+ -		NR	+ -	NR
204	NO3		+ -			+ -		NR	+ -	NR
SUM(%)		0.000			0.000			35.450		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : AVERAGE VALUE FROM SEVEN LOCATIONS IN AND AROUND VISALIA. ANALYTICAL METHODS UNKNOWN. REF. 31

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41303	31	SOIL DUST	J.T. LEACH , G. BATES AND L. STANFIELD,	UNSPECIFIED ANALYSIS OF SEVEN SOILS IN AND
41303		CALIF.	SAN JOAQUIN VALLEY PARTICULATE STUDY,"	AROUND VISALIA, CA.
41303			UNPUBLISHED (1979)	
41303				

SOURCE: SOIL DUST - SOUTH BEND, INDIANA
SCC: NONE
CONTROLS: NONE

PROFILE: 41304
RANKING: 3334
RATING : B

SPECIES NUMBER	SPECIES NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	9.040	+ -	2.299	7.581	+ -	0.433	7.581	+ -	0.433
14	SI	29.675	+ -	7.270	30.660	+ -	1.684	30.660	+ -	1.684
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	7.323	+ -	2.135	0.302	+ -	0.064	0.302	+ -	0.064
17	CL	0.743	+ -	0.390	0.171	+ -	0.031	0.171	+ -	0.031
19	K	1.563	+ -	4.680	1.500	+ -	0.099	1.500	+ -	0.099
20	CA	1.230	+ -	0.365	2.030	+ -	0.124	2.030	+ -	0.124
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.370	+ -	0.129	0.416	+ -	0.030	0.416	+ -	0.030
23	V	<	+ -	NR	0.016	+ -	0.006	0.016	+ -	0.006
24	CR	0.061	+ -	0.061	0.032	+ -	0.006	0.032	+ -	0.006
25	MN	0.136	+ -	0.074	0.120	+ -	0.010	0.120	+ -	0.010
26	FE	4.138	+ -	1.069	3.535	+ -	0.206	3.535	+ -	0.206
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.028	+ -	0.051	0.006	+ -	0.003	0.006	+ -	0.003
29	CU	<	+ -	NR	<	+ -	NR	<	+ -	NR
30	ZN	0.280	+ -	0.101	0.071	+ -	0.009	0.071	+ -	0.009
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.280	+ -	0.106	0.003	+ -	0.004	0.003	+ -	0.004
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.143	+ -	0.436	0.083	+ -	0.016	0.083	+ -	0.016
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		55.010			46.526			46.526		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REENTRAINED NATIVE SOILS. ANALYSIS OF A SINGLE COMPOSITE OF THREE SUBSAMPLES COLLECTED IN A RURAL AREA. REF. 32

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41304	32	SOIL DUST	J.E. CORE, J.A. COOPER R.T. DECESAR AND J.E.	SAMPLES OBTAINED FROM A MIX OF 3 SUBSAMPLES
41304		INDIANA	HOUCH,"SOUTH BEND, INDIANA AEROSOL STUDY",	OBTAINED IN A RURAL AREA NEAR SOUTH BEND. TSP
41304			NEA, INC. (1981)	COMPOSITION ASSUMED SIMILAR TO COARSE MODE.
41304				

13-Jun-85 SOURCE LIBRARY

SOURCE: SOIL DUST- HOUSTON, TEXAS
SCC: NONE
CONTROLS: NONE

PROFILE: 41305
RANKING: 3321
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30UM +-	****** UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		5.600	+ -	2.800	5.600	+ -	2.800
14	SI		+ -		17.200	+ -	5.300	17.200	+ -	5.300
15	P		+ -		<	+ -	NR	<	+ -	NR
16	S		+ -		<	+ -	NR	<	+ -	NR
17	CL		+ -		<	+ -	NR	<	+ -	NR
19	K		+ -		0.900	+ -	0.135	0.900	+ -	0.135
20	CA		+ -		7.000	+ -	1.050	7.000	+ -	1.050
21	SC		+ -		<	+ -	NR	<	+ -	NR
22	TI		+ -		0.400	+ -	0.060	0.400	+ -	0.060
23	V		+ -		<	+ -	NR	<	+ -	NR
24	CR		+ -		<	+ -	NR	<	+ -	NR
25	MN		+ -		0.060	+ -	0.009	0.060	+ -	0.009
26	FE		+ -		2.800	+ -	0.420	2.800	+ -	0.420
27	CO		+ -		<	+ -	NR	<	+ -	NR
28	NI		+ -		<	+ -	NR	<	+ -	NR
29	CU		+ -		0.500	+ -	0.075	0.500	+ -	0.075
30	ZN		+ -		0.300	+ -	0.045	0.300	+ -	0.045
31	GA		+ -		<	+ -	NR	<	+ -	NR
32	GE		+ -		<	+ -	NR	<	+ -	NR
33	AS		+ -		<	+ -	NR	<	+ -	NR
34	SE		+ -		<	+ -	NR	<	+ -	NR
35	BR		+ -		<	+ -	NR	<	+ -	NR
37	RB		+ -		<	+ -	NR	<	+ -	NR
38	SR		+ -		<	+ -	NR	<	+ -	NR
40	ZR		+ -		<	+ -	NR	<	+ -	NR
47	AG		+ -		<	+ -	NR	<	+ -	NR
48	CD		+ -		<	+ -	NR	<	+ -	NR
50	SN		+ -		<	+ -	NR	<	+ -	NR
51	SB		+ -		<	+ -	NR	<	+ -	NR
55	CS		+ -		<	+ -	NR	<	+ -	NR
56	BA		+ -		<	+ -	NR	<	+ -	NR
58	CE		+ -		<	+ -	NR	<	+ -	NR
80	HG		+ -		<	+ -	NR	<	+ -	NR
82	PB		+ -		0.040	+ -	0.006	0.040	+ -	0.006
201	OC		+ -		NA	+ -	NR	NA	+ -	NR
202	EC		+ -		NA	+ -	NR	NA	+ -	NR
203	SO4		+ -		NA	+ -	NR	NA	+ -	NR
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)		34.800			34.800			34.800		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 40

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41305	40	SOIL DUST	R. K. STEVENS, ET. AL.," MATHEMATICAL AND	REINTRAINED SOIL DUST SAMPLES ANALYZED BY XRF
41305		TEXAS	EMPIRICAL RECEPTOR MODELS: QHAIL ROOST II"	
41305			U.S. EPA ORD ESRL. RTP,NC (1983).	
41305				

SOURCE: SOIL DUST - EAST HELENA, MONTANA
SCC: NONE
CONTROLS: NONE

PROFILE: 41306
RANKING: 3324
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM ********* % BY WT	+ -	****** UNC	COARSE 2.5-10UM ********* % BY WT	+-	****** UNC	TSP <30 UM ********* % BY WT	+-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	1.000	+ -	0.200	1.100	+ -	0.100		+ -	
12	MG	2.000	+ -	0.700	1.900	+ -	0.300		+ -	
13	AL	18.000	+ -	1.000	9.500	+ -	0.500		+ -	
14	SI	48.000	+ -	2.000	29.000	+ -	1.000		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.240	+ -	0.150	0.200	+ -	0.020		+ -	
17	CL	0.200	+ -	0.080	0.120	+ -	NR		+ -	
19	K	2.000	+ -	0.100	1.800	+ -	0.100		+ -	
20	CA	1.800	+ -	0.100	1.730	+ -	0.090		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.760	+ -	0.060	0.790	+ -	0.040		+ -	
23	V	0.030	+ -	0.020	0.030	+ -	NR		+ -	
24	CR	0.020	+ -	0.020	0.030	+ -	NR		+ -	
25	MN	0.280	+ -	0.030	0.170	+ -	NR		+ -	
26	FE	8.500	+ -	0.500	6.900	+ -	0.300		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	0.050	+ -	0.030	0.020	+ -	NR		+ -	
30	ZN	<	+ -	NR	<	+ -	NR		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.080	+ -	0.060	0.010	+ -	NR		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		82.960			53.300			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 43

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41306	43	SOIL DUST	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	RESUSPENDED SOIL DUST FROM EAST HELENA.
41306		MONTANA	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	ANALYZED BY XRF,ONLY.
41306			THE STATE OF MONTANA. NEA, INC.(1982)	
41306				

SOURCE LIBRARY

SOURCE: SOIL DUST - IDAHO
SCC: NONE
CONTROLS: NONE

PROFILE: 41307
RANKING: 3324
RATING : B

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	MA	+ -	NR		+ -	
11	NA	1.000	+ -	0.200	1.100	+ -	0.100		+ -	
12	MG	2.000	+ -	0.700	1.900	+ -	0.300		+ -	
13	AL	18.000	+ -	1.000	9.500	+ -	0.500		+ -	
14	SI	48.000	+ -	2.000	29.000	+ -	1.000		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.240	+ -	0.150	0.200	+ -	0.020		+ -	
17	CL	0.200	+ -	0.080	0.120	+ -	NR		+ -	
19	K	2.000	+ -	0.100	1.800	+ -	0.100		+ -	
20	CA	1.800	+ -	0.100	1.730	+ -	0.090		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.760	+ -	0.060	0.790	+ -	0.040		+ -	
23	V	0.030	+ -	0.020	0.030	+ -	NR		+ -	
24	CR	0.020	+ -	0.020	0.030	+ -	NR		+ -	
25	MN	0.280	+ -	0.030	0.170	+ -	NR		+ -	
26	FE	8.500	+ -	0.500	6.900	+ -	0.300		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	0.050	+ -	0.030	<	+ -	NR		+ -	
30	ZN	<	+ -	NR	0.020	+ -	NR		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.080	+ -	0.060	0.010	+ -	NR		+ -	
201	OC	NR	+ -	NR	NA	+ -	NR		+ -	
202	EC	NR	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NR	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NR	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		82.960			53.300			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 42. LEWISTON, IDAHO.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41307	42	SOIL DUST	J.A. COOPER,"POTLATCH CORPORATION AEROSOL	RESUSPENDED SOIL DUST FROM LEWISTON, IDAHO.
41307		IDAHO	CHARACTERIZATION STUDY," FINAL REPORT TO THE	ANALYZED BY XRF.
41307			POTLATCH CORPORATION BY NEA, INC. SEPT. 1979	
41307				

13-Jun-85 SOURCE LIBRARY

SOURCE: SOIL DUST - CRESTON, IOWA
SCC: NONE
CONTROLS: NONE

PROFILE: 41308
RANKING: 2332
RATING : B

		FINE <2.5 UM			COARSE 2.5-10UM			TSP <30 UM		
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		3.109	+ -	NR	3.109	+ -	NR
14	SI		+ -		13.039	+ -	NR	13.039	+ -	NR
15	P		+ -		0.105	+ -	NR	0.105	+ -	NR
16	S		+ -		0.824	+ -	NR	0.824	+ -	NR
17	CL		+ -		0.262	+ -	NR	0.262	+ -	NR
19	K		+ -		0.786	+ -	NR	0.786	+ -	NR
20	CA		+ -		15.195	+ -	NR	15.195	+ -	NR
21	SC		+ -		<	+ -	NR	<	+ -	NR
22	TI		+ -		0.199	+ -	NR	0.199	+ -	NR
23	V		+ -		0.014	+ -	NR	0.014	+ -	NR
24	CR		+ -		0.020	+ -	NR	0.020	+ -	NR
25	MN		+ -		0.072	+ -	NR	0.072	+ -	NR
26	FE		+ -		3.390	+ -	NR	3.390	+ -	NR
27	CO		+ -		<	+ -	NR	<	+ -	NR
28	NI		+ -		0.006	+ -	NR	0.006	+ -	NR
29	CU		+ -		0.018	+ -	NR	0.018	+ -	NR
30	ZN		+ -		0.047	+ -	NR	0.047	+ -	NR
31	GA		+ -		<	+ -	NR	<	+ -	NR
32	GE		+ -		<	+ -	NR	<	+ -	NR
33	AS		+ -		0.018	+ -	NR	0.018	+ -	NR
34	SE		+ -		<	+ -	NR	<	+ -	NR
35	BR		+ -		0.003	+ -	NR	0.003	+ -	NR
37	RB		+ -		<	+ -	NR	<	+ -	NR
38	SR		+ -		0.047	+ -	NR	0.047	+ -	NR
40	ZR		+ -		<	+ -	NR	<	+ -	NR
47	AG		+ -		<	+ -	NR	<	+ -	NR
48	CD		+ -		<	+ -	NR	<	+ -	NR
50	SN		+ -		<	+ -	NR	<	+ -	NR
51	SB		+ -		<	+ -	NR	<	+ -	NR
55	CS		+ -		<	+ -	NR	<	+ -	NR
56	BA		+ -		0.039	+ -	NR	0.039	+ -	NR
58	CE		+ -		<	+ -	NR	<	+ -	NR
80	HG		+ -		0.002	+ -	NR	0.002	+ -	NR
82	PB		+ -		0.037	+ -	NR	0.037	+ -	NR
200	TC		+ -		1.791	+ -	NR	1.791	+ -	NR
205	CO3		+ -		28.368	+ -	NR	28.368	+ -	NR
203	SO4		+ -		NA	+ -	NR	NA	+ -	NR
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)		0.000			67.391			67.391		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : UNCERTAINTIES 10% OF VALUE. RESUSPENDED SOILS; COMPOSITE OF 3 SAMPLES
REF. 26

```
13-Jun-85                                   SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE   |                   REFERENCE                 |               REFERENCE ABSTRACT              |
NUMBER |NUMBER   |GROUP    |                                             |                                               |
--------------------------------------------------------------------------------------------------------------------------|
 41308 |      26 |SOIL DUST|J.E CORE, ET. AL., "IOWA SOURCE              |RESUSPENDED SOILS ANALYZED BY XRF AND CARBON |
 41308 |         |IOWA     |APPORTIONMENT STUDY,"  REPORT TO US EPA      |OXIDATION. TSP FRACTION. CRESTON,IOWA        |
 41308 |         |         |REGION VII BY NEA,INC (1982).                |                                             |
 41308 |         |         |                                             |                                          |
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13-Jun-85

SOURCE LIBRARY

SOURCE: SOIL DUST - COUNCIL BLUFFS, IOWA
SCC: NONE
CONTROLS: NONE

PROFILE: 41309
RANKING: 2332
RATING : B

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM ********* % BY WT	+-	****** UNC	COARSE 2.5-10UM ********* % BY WT	+-	****** UNC	TSP <30 UM ********* % BY WT	+-	****** UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		5.160	+ -	NR	5.160	+ -	NR
14	SI		+ -		21.693	+ -	NR	21.693	+ -	NR
15	P		+ -		0.120	+ -	NR	0.120	+ -	NR
16	S		+ -		0.629	+ -	NR	0.629	+ -	NR
17	CL		+ -		0.198	+ -	NR	0.198	+ -	NR
19	K		+ -		1.138	+ -	NR	1.138	+ -	NR
20	CA		+ -		7.225	+ -	NR	7.225	+ -	NR
21	SC		+ -		<	+ -	NR	<	+ -	NR
22	TI		+ -		0.287	+ -	NR	0.287	+ -	NR
23	V		+ -		0.019	+ -	NR	0.019	+ -	NR
24	CR		+ -		0.016	+ -	NR	0.016	+ -	NR
25	MN		+ -		0.068	+ -	NR	0.068	+ -	NR
26	FE		+ -		2.301	+ -	NR	2.301	+ -	NR
27	CO		+ -		<	+ -	NR	<	+ -	NR
28	NI		+ -		0.006	+ -	NR	0.006	+ -	NR
29	CU		+ -		0.008	+ -	NR	0.008	+ -	NR
30	ZN		+ -		0.064	+ -	NR	0.064	+ -	NR
31	GA		+ -		<	+ -	NR	<	+ -	NR
32	GE		+ -		<	+ -	NR	<	+ -	NR
33	AS		+ -		0.005	+ -	NR	0.005	+ -	NR
34	SE		+ -		<	+ -	NR	<	+ -	NR
35	BR		+ -		0.015	+ -	NR	0.015	+ -	NR
37	RB		+ -		<	+ -	NR	<	+ -	NR
38	SR		+ -		0.026	+ -	NR	0.026	+ -	NR
40	ZR		+ -		<	+ -	NR	<	+ -	NR
47	AG		+ -		<	+ -	NR	<	+ -	NR
48	CD		+ -		<	+ -	NR	<	+ -	NR
50	SN		+ -		<	+ -	NR	<	+ -	NR
51	SB		+ -		0.209	+ -	NR	0.209	+ -	NR
55	CS		+ -		<	+ -	NR	<	+ -	NR
56	BA		+ -		0.049	+ -	NR	0.049	+ -	NR
58	CE		+ -		<	+ -	NR	<	+ -	NR
80	HG		+ -		<	+ -	NR	<	+ -	NR
82	PB		+ -		0.069	+ -	NR	0.069	+ -	NR
200	TC		+ -		2.295	+ -	NR	2.295	+ -	NR
205	CO3		+ -		12.495	+ -	NR	12.495	+ -	NR
203	SO4		+ -		NA	+ -	NR	NA	+ -	NR
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)		0.000			54.095			54.095		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : UNCERTAINTIES 10% OF VALUE. RESUSPENDED SOILS; COMPOSITE OF 3 SAMPLES PER CITY. REF. 26.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41309	26	SOIL DUST	J.E CORE, ET. AL., "IOWA SOURCE	RESUSPENDED SOILS ANALYZED BY XRF AND CARBON
41309		IOWA	APPORTIONMENT STUDY," REPORT TO US EPA	OXIDATION. TSP FRACTION. COUNCIL BLUFFS,IOWA
41309			REGION VII BY NEA,INC (1982).	
41309				

13-Jun-85 SOURCE LIBRARY

SOURCE: SOIL DUST - SIOUX CITY, IOWA
SCC: NONE
CONTROLS: NONE

PROFILE: 41310
RANKING: 2332
RATING : B

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		4.926	+ -	NR	4.926	+ -	NR
14	SI		+ -		20.697	+ -	NR	20.697	+ -	NR
15	P		+ -		0.094	+ -	NR	0.094	+ -	NR
16	S		+ -		0.220	+ -	NR	0.220	+ -	NR
17	CL		+ -		0.100	+ -	NR	0.100	+ -	NR
19	K		+ -		1.055	+ -	NR	1.055	+ -	NR
20	CA		+ -		3.998	+ -	NR	3.998	+ -	NR
21	SC		+ -		<	+ -	NR	<	+ -	NR
22	TI		+ -		0.319	+ -	NR	0.319	+ -	NR
23	V		+ -		0.021	+ -	NR	0.021	+ -	NR
24	CR		+ -		0.017	+ -	NR	0.017	+ -	NR
25	MN		+ -		0.153	+ -	NR	0.153	+ -	NR
26	FE		+ -		3.011	+ -	NR	3.011	+ -	NR
27	CO		+ -		<	+ -	NR	<	+ -	NR
28	NI		+ -		0.007	+ -	NR	0.007	+ -	NR
29	CU		+ -		0.005	+ -	NR	0.005	+ -	NR
30	ZN		+ -		0.035	+ -	NR	0.035	+ -	NR
31	GA		+ -		<	+ -	NR	<	+ -	NR
32	GE		+ -		<	+ -	NR	<	+ -	NR
33	AS		+ -		0.005	+ -	NR	0.005	+ -	NR
34	SE		+ -		<	+ -	NR	<	+ -	NR
35	BR		+ -		0.002	+ -	NR	0.002	+ -	NR
37	RB		+ -		<	+ -	NR	<	+ -	NR
38	SR		+ -		0.018	+ -	NR	0.018	+ -	NR
40	ZR		+ -		<	+ -	NR	<	+ -	NR
47	AG		+ -		<	+ -	NR	<	+ -	NR
48	CD		+ -		<	+ -	NR	<	+ -	NR
50	SN		+ -		<	+ -	NR	<	+ -	NR
51	SB		+ -		0.001	+ -	NR	0.001	+ -	NR
55	CS		+ -		<	+ -	NR	<	+ -	NR
56	BA		+ -		0.114	+ -	NR	0.114	+ -	NR
58	CE		+ -		<	+ -	NR	<	+ -	NR
80	HG		+ -		<	+ -	NR	<	+ -	NR
82	PB		+ -		0.042	+ -	NR	0.042	+ -	NR
200	TC		+ -		2.313	+ -	NR	2.313	+ -	NR
205	CO3		+ -		17.971	+ -	NR	17.971	+ -	NR
203	SO4		+ -		NA	+ -	NR	NA	+ -	NR
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)		0.000			55.124			55.124		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : UNCERTAINTIES 10% OF VALUE. RESUSPENDED SOILS; COMPOSITE OF 3 SAMPLES PER CITY. REF. 26

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41310	26	SOIL DUST	J.E CORE, ET. AL., "IOWA SOURCE	RESUSPENDED SOILS ANALYZED BY XRF AND CARBON
41310		IOWA	APPORTIONMENT STUDY," REPORT TO US EPA	OXIDATION. TSP FRACTION. SIOUX CITY,IOWA
41310			REGION VII BY NEA,INC (1982).	
41310				

13-Jun-85

SOURCE LIBRARY

SOURCE: SOIL DUST - CEDAR RAPIDS, IOWA
SCC: NONE
CONTROLS: NONE

PROFILE: 41311
RANKING: 2332
RATING : C

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		1.906	+ -	NR	1.906	+ -	NR
14	SI		+ -		7.171	+ -	NR	7.171	+ -	NR
15	P		+ -		0.040	+ -	NR	0.040	+ -	NR
16	S		+ -		0.895	+ -	NR	0.895	+ -	NR
17	CL		+ -		0.360	+ -	NR	0.360	+ -	NR
19	K		+ -		0.821	+ -	NR	0.821	+ -	NR
20	CA		+ -		25.808	+ -	NR	25.808	+ -	NR
21	SC		+ -		<	+ -	NR	<	+ -	NR
22	TI		+ -		0.088	+ -	NR	0.088	+ -	NR
23	V		+ -		0.005	+ -	NR	0.005	+ -	NR
24	CR		+ -		0.005	+ -	NR	0.005	+ -	NR
25	MN		+ -		0.138	+ -	NR	0.138	+ -	NR
26	FE		+ -		0.865	+ -	NR	0.865	+ -	NR
27	CO		+ -		<	+ -	NR	<	+ -	NR
28	NI		+ -		0.005	+ -	NR	0.005	+ -	NR
29	CU		+ -		0.003	+ -	NR	0.003	+ -	NR
30	ZN		+ -		0.029	+ -	NR	0.029	+ -	NR
31	GA		+ -		<	+ -	NR	<	+ -	NR
32	GE		+ -		<	+ -	NR	<	+ -	NR
33	AS		+ -		0.001	+ -	NR	0.001	+ -	NR
34	SE		+ -		<	+ -	NR	<	+ -	NR
35	BR		+ -		0.002	+ -	NR	0.002	+ -	NR
37	RB		+ -		<	+ -	NR	<	+ -	NR
38	SR		+ -		0.026	+ -	NR	0.026	+ -	NR
40	ZR		+ -		<	+ -	NR	<	+ -	NR
47	AG		+ -		<	+ -	NR	<	+ -	NR
48	CD		+ -		<	+ -	NR	<	+ -	NR
50	SN		+ -		<	+ -	NR	<	+ -	NR
51	SB		+ -		<	+ -	NR	<	+ -	NR
55	CS		+ -		<	+ -	NR	<	+ -	NR
56	BA		+ -		<	+ -	NR	<	+ -	NR
58	CE		+ -		<	+ -	NR	<	+ -	NR
80	HG		+ -		<	+ -	NR	<	+ -	NR
82	PB		+ -		0.029	+ -	NR	0.029	+ -	NR
200	TC		+ -		3.222	+ -	NR	3.222	+ -	NR
205	CO3		+ -		36.189	+ -	NR	36.189	+ -	NR
203	SO4		+ -		NA	+ -	NR	NA	+ -	NR
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)		0.000			77.608			77.608		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : UNCERTAINTIES 10% OF VALUE. RESUSPENDED SOILS; COMPOSITE OF 3 SAMPLES PER CITY.
REF. 26.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41311	26	SOIL DUST	J.E CORE, ET. AL., "IOWA SOURCE	RESUSPENDED SOILS ANALYZED BY XRF AND CARBON
41311		IOWA	APPORTIONMENT STUDY," REPORT TO US EPA	OXIDATION. TSP FRACTION. CEDAR RAPIDS,IOWA
41311			REGION VII BY NEA,INC (1982).	
41311				

13-Jun-85

SOURCE LIBRARY

SOURCE: SOIL DUST - DAVENPORT, IOWA
SCC: NONE
CONTROLS: NONE

PROFILE: 41312
RANKING: 2332
RATING : C

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -		NA	+ -	NR	NA	+ -	NR
5	B		+ -		NA	+ -	NR	NA	+ -	NR
9	F		+ -		NA	+ -	NR	NA	+ -	NR
11	NA		+ -		NA	+ -	NR	NA	+ -	NR
12	MG		+ -		NA	+ -	NR	NA	+ -	NR
13	AL		+ -		2.333	+ -	NR	2.333	+ -	NR
14	SI		+ -		7.958	+ -	NR	7.958	+ -	NR
15	P		+ -		0.057	+ -	NR	0.057	+ -	NR
16	S		+ -		0.663	+ -	NR	0.663	+ -	NR
17	CL		+ -		0.314	+ -	NR	0.314	+ -	NR
19	K		+ -		0.602	+ -	NR	0.602	+ -	NR
20	CA		+ -		20.428	+ -	NR	20.428	+ -	NR
21	SC		+ -		<	+ -	NR	<	+ -	NR
22	TI		+ -		0.163	+ -	NR	0.163	+ -	NR
23	V		+ -		0.009	+ -	NR	0.009	+ -	NR
24	CR		+ -		0.011	+ -	NR	0.011	+ -	NR
25	MN		+ -		0.070	+ -	NR	0.070	+ -	NR
26	FE		+ -		1.502	+ -	NR	1.502	+ -	NR
27	CO		+ -		<	+ -	NR	<	+ -	NR
28	NI		+ -		0.007	+ -	NR	0.007	+ -	NR
29	CU		+ -		0.014	+ -	NR	0.014	+ -	NR
30	ZN		+ -		0.060	+ -	NR	0.060	+ -	NR
31	GA		+ -		<	+ -	NR	<	+ -	NR
32	GE		+ -		<	+ -	NR	<	+ -	NR
33	AS		+ -		0.008	+ -	NR	0.008	+ -	NR
34	SE		+ -		<	+ -	NR	<	+ -	NR
35	BR		+ -		0.003	+ -	NR	0.003	+ -	NR
37	RB		+ -		<	+ -	NR	<	+ -	NR
38	SR		+ -		0.052	+ -	NR	0.052	+ -	NR
40	ZR		+ -		<	+ -	NR	<	+ -	NR
47	AG		+ -		<	+ -	NR	<	+ -	NR
48	CD		+ -		<	+ -	NR	<	+ -	NR
50	SN		+ -		<	+ -	NR	<	+ -	NR
51	SB		+ -		<	+ -	NR	<	+ -	NR
55	CS		+ -		<	+ -	NR	<	+ -	NR
56	BA		+ -		<	+ -	NR	<	+ -	NR
58	CE		+ -		<	+ -	NR	<	+ -	NR
80	HG		+ -		<	+ -	NR	<	+ -	NR
82	PB		+ -		0.123	+ -	NR	0.123	+ -	NR
200	TC		+ -		3.942	+ -	NR	3.942	+ -	NR
205	CO3		+ -		37.206	+ -	NR	37.206	+ -	NR
203	SO4		+ -		NA	+ -	NR	NA	+ -	NR
204	NO3		+ -		NA	+ -	NR	NA	+ -	NR
SUM(%)		0.000			75.525			75.525		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : UNCERTAINTIES 10% OF VALUE. RESUSPENDED SOILS; COMPOSITE OF 3 SAMPLES PER CITY.
REF. 26.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41312	26	SOIL DUST	J.E CORE, ET. AL., "IOWA SOURCE	RESUSPENDED SOILS ANALYZED BY XRF AND CARBON
41312		IOWA	APPORTIONMENT STUDY," REPORT TO US EPA	OXIDATION. TSP FRACTION. DAVENPORT,IOWA
41312			REGION VII BY NEA,INC (1982).	
41312				

SOURCE: SOIL DUST - SPOKANE, WASHINGTON
SCC: NONE
CONTROLS: NONE

PROFILE: 41313
RANKING: 3334
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	1.866	+ -	0.154	1.866	+ -	0.154		+ -	
13	AL	11.010	+ -	0.778	11.010	+ -	0.778		+ -	
14	SI	27.975	+ -	1.935	27.975	+ -	1.935		+ -	
15	P	0.299	+ -	0.031	0.299	+ -	0.031		+ -	
16	S	0.036	+ -	0.096	0.036	+ -	0.096		+ -	
17	CL	0.112	+ -	0.045	0.112	+ -	0.045		+ -	
19	K	1.545	+ -	0.127	1.545	+ -	0.127		+ -	
20	CA	0.795	+ -	0.070	0.795	+ -	0.070		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.442	+ -	0.040	0.442	+ -	0.040		+ -	
23	V	0.025	+ -	0.009	0.025	+ -	0.009		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	0.240	+ -	0.022	0.240	+ -	0.022		+ -	
26	FE	5.280	+ -	0.375	5.280	+ -	0.375		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	0.010	+ -	0.008	0.010	+ -	0.008		+ -	
29	CU	0.180	+ -	0.007	0.180	+ -	0.007		+ -	
30	ZN	0.027	+ -	0.007	0.027	+ -	0.007		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	0.013	+ -	0.009	0.013	+ -	0.009		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	0.053	+ -	0.064	0.053	+ -	0.064		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.106	+ -	0.025	0.106	+ -	0.025		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		50.014			50.014			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : RESUSPENDED LOCAL SOIL SAMPLES, FINE FRACTION, ONLY. EACH ANALYZED SAMPLE IS A COMPOSITE OF THREE SOIL SAMPLES. REF. 27.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41313	27	SOIL DUST	J.E CORE, ET. AL., "A STUDY OF RESIDENTIAL	RESUSPENDED SOIL DUST FROM
41313		WASHINGTON	WOOD COMBUSTION TASK 1-AMBIENT AIR QUALITY	SPOKANE,WASHINGTON AREA. XRF ANALYSIS OF
41313			IMPACT ANALYSIS ,"REPORT PREPARED FOR US	FINE FRACTION.
41313			EPA REGION X BY NEA, INC. (1982).	
41313				

SOURCE: SOIL DUST - BOISE, IDAHO
SCC: NONE
CONTROLS: NONE

PROFILE: 41314
RANKING: 3334
RATING : B

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR		+ -			+ -	
5	B	NA	+ -	NR		+ -			+ -	
9	F	NA	+ -	NR		+ -			+ -	
11	NA	NA	+ -	NR		+ -			+ -	
12	MG	0.904	+ -	0.068		+ -			+ -	
13	AL	8.160	+ -	0.460		+ -			+ -	
14	SI	30.273	+ -	1.660		+ -			+ -	
15	P	0.243	+ -	0.021		+ -			+ -	
16	S	0.524	+ -	0.080		+ -			+ -	
17	CL	0.083	+ -	0.030		+ -			+ -	
19	K	1.740	+ -	0.122		+ -			+ -	
20	CA	1.268	+ -	0.081		+ -			+ -	
21	SC	<	+ -	NR		+ -			+ -	
22	TI	0.439	+ -	0.032		+ -			+ -	
23	V	0.033	+ -	0.007		+ -			+ -	
24	CR	<	+ -	NR		+ -			+ -	
25	MN	0.097	+ -	0.009		+ -			+ -	
26	FE	3.406	+ -	0.199		+ -			+ -	
27	CO	<	+ -	NR		+ -			+ -	
28	NI	<	+ -	NR		+ -			+ -	
29	CU	0.007	+ -	0.004		+ -			+ -	
30	ZN	0.081	+ -	0.009		+ -			+ -	
31	GA	<	+ -	NR		+ -			+ -	
32	GE	<	+ -	NR		+ -			+ -	
33	AS	<	+ -	NR		+ -			+ -	
34	SE	<	+ -	NR		+ -			+ -	
35	BR	<	+ -	NR		+ -			+ -	
37	RB	<	+ -	NR		+ -			+ -	
38	SR	0.035	+ -	0.007		+ -			+ -	
40	ZR	<	+ -	NR		+ -			+ -	
47	AG	<	+ -	NR		+ -			+ -	
48	CD	0.068	+ -	0.040		+ -			+ -	
50	SN	<	+ -	NR		+ -			+ -	
51	SB	<	+ -	NR		+ -			+ -	
55	CS	<	+ -	NR		+ -			+ -	
56	BA	<	+ -	NR		+ -			+ -	
58	CE	<	+ -	NR		+ -			+ -	
80	HG	<	+ -	NR		+ -			+ -	
82	PB	0.205	+ -	0.022		+ -			+ -	
201	OC	NA	+ -	NR		+ -			+ -	
202	EC	NA	+ -	NR		+ -			+ -	
203	SO4	NA	+ -	NR		+ -			+ -	
204	NO3	NA	+ -	NR		+ -			+ -	
SUM(%)		47.566			0.000			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : RESUSPENDED LOCAL SOIL SAMPLES, FINE FRACTION, ONLY. EACH ANALYZED SAMPLE IS A COMPOSITE OF THREE SOIL SAMPLES. REF. 27.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41314	27	SOIL DUST	J.E CORE, ET. AL., "A STUDY OF RESIDENTIAL	RESUSPENDED SOIL DUST FROM
41314		IDAHO	WOOD COMBUSTION TASK 1-AMBIENT AIR QUALITY	BOISE, IDAHO. XRF ANALYSIS OF
41314			IMPACT ANALYSIS ,"REPORT PREPARED FOR US	FINE FRACTION.
41314			EPA REGION X BY NEA, INC. (1982).	
41314				

SOURCE: SOIL DUST - BAKERSFIELD , CALIFORNIA
SCC: NONE
CONTROLS: NONE

PROFILE: 41315
RANKING: UNKNOWN
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE		+ -			+ -		NR	+ -	NR
5	B		+ -			+ -		NR	+ -	NR
9	F		+ -			+ -		NR	+ -	NR
11	NA		+ -			+ -		0.800	+ -	NR
12	MG		+ -			+ -		0.600	+ -	NR
13	AL		+ -			+ -		4.700	+ -	NR
14	SI		+ -			+ -		14.000	+ -	NR
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		0.500	+ -	NR
17	CL		+ -			+ -		0.200	+ -	NR
19	K		+ -			+ -		1.500	+ -	NR
20	CA		+ -			+ -		1.800	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.200	+ -	NR
23	V		+ -			+ -		0.050	+ -	NR
24	CR		+ -			+ -		0.050	+ -	NR
25	MN		+ -			+ -		0.050	+ -	NR
26	FE		+ -			+ -		3.200	+ -	NR
27	CO		+ -			+ -		<	+ -	NR
28	NI		+ -			+ -		0.050	+ -	NR
29	CU		+ -			+ -		0.050	+ -	NR
30	ZN		+ -			+ -		0.050	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		<	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		0.050	+ -	NR
37	RB		+ -			+ -		0.050	+ -	NR
38	SR		+ -			+ -		0.050	+ -	NR
40	ZR		+ -			+ -		0.050	+ -	NR
47	AG		+ -			+ -		0.050	+ -	NR
48	CD		+ -			+ -		0.050	+ -	NR
50	SN		+ -			+ -		0.050	+ -	NR
51	SB		+ -			+ -		0.050	+ -	NR
55	CS		+ -			+ -		0.050	+ -	NR
56	BA		+ -			+ -		0.200	+ -	NR
58	CE		+ -			+ -		0.200	+ -	NR
80	HG		+ -			+ -		0.200	+ -	NR
82	PB		+ -			+ -		0.200	+ -	NR
201	OC		+ -			+ -		NR	+ -	NR
202	EC		+ -			+ -		NR	+ -	NR
203	SO4		+ -			+ -		NR	+ -	NR
204	NO3		+ -			+ -		NR	+ -	NR
SUM(%)		0.000			0.000			29.050		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : AVERAGE VALUES FROM SEVEN LOCATIONS NEAR BAKERSFIELD. ANALYTICAL METHODS UNKNOWN. REF. 31.

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41315	31	SOIL DUST	J.T. LEACH, G BATES AND L STANFIELD,"SAN	AVERAGE VALUES FROM SEVEN LOCATIONS NEAR
41315		CALIF	JOAQUIN VALLEY PARTICULATE MATTER	BAKERSFILED.REPORT IS OBSCURE AND COULD NOT
41315			STUDY,"UNPUBLISHED. 1979	BE LOCATED.MAY HAVE BEEN AUTHORED BY PEDCO
41315				ENVIRONMENTAL. DATA NORMALIZED TO 1.5% K.
41315				

SOURCE: SOIL DUST - PASADENA, CALIFORNIA
SCC: NONE
CONTROLS: NONE

PROFILE: 41316
RANKING: UNKNOWN
RATING : D

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM +-	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE		+ -		NR	+ -	NR	NR	+ -	NR
5	B		+ -		NR	+ -	NR	NR	+ -	NR
9	F		+ -		NR	+ -	NR	NR	+ -	NR
11	NA		+ -		2.500	+ -	NR	2.500	+ -	NR
12	MG		+ -		1.400	+ -	NR	1.400	+ -	NR
13	AL		+ -		8.200	+ -	NR	8.200	+ -	NR
14	SI		+ -		20.000	+ -	NR	20.000	+ -	NR
15	P		+ -		NR	+ -	NR	NR	+ -	NR
16	S		+ -		NR	+ -	NR	NR	+ -	NR
17	CL		+ -		NR	+ -	NR	NR	+ -	NR
19	K		+ -		1.500	+ -	NR	1.500	+ -	NR
20	CA		+ -		1.500	+ -	NR	1.500	+ -	NR
21	SC		+ -		NR	+ -	NR	NR	+ -	NR
22	TI		+ -		0.400	+ -	NR	0.400	+ -	NR
23	V		+ -		0.006	+ -	NR	0.006	+ -	NR
24	CR		+ -		NR	+ -	NR	NR	+ -	NR
25	MN		+ -		0.110	+ -	NR	0.110	+ -	NR
26	FE		+ -		3.200	+ -	NR	3.200	+ -	NR
27	CO		+ -		0.002	+ -	NR	0.002	+ -	NR
28	NI		+ -		0.004	+ -	NR	0.004	+ -	NR
29	CU		+ -		0.008	+ -	NR	0.008	+ -	NR
30	ZN		+ -		<	+ -	NR	<	+ -	NR
31	GA		+ -		NR	+ -	NR	NR	+ -	NR
32	GE		+ -		NR	+ -	NR	NR	+ -	NR
33	AS		+ -		NR	+ -	NR	NR	+ -	NR
34	SE		+ -		NR	+ -	NR	NR	+ -	NR
35	BR		+ -		NR	+ -	NR	NR	+ -	NR
37	RB		+ -		NR	+ -	NR	NR	+ -	NR
38	SR		+ -		NR	+ -	NR	NR	+ -	NR
40	ZR		+ -		NR	+ -	NR	NR	+ -	NR
47	AG		+ -		NR	+ -	NR	NR	+ -	NR
48	CD		+ -		NR	+ -	NR	NR	+ -	NR
50	SN		+ -		NR	+ -	NR	NR	+ -	NR
51	SB		+ -		NR	+ -	NR	NR	+ -	NR
55	CS		+ -		NR	+ -	NR	NR	+ -	NR
56	BA		+ -		0.060	+ -	NR	0.060	+ -	NR
58	CE		+ -		NR	+ -	NR	NR	+ -	NR
80	HG		+ -		NR	+ -	NR	NR	+ -	NR
82	PB		+ -		0.020	+ -	NR	0.020	+ -	NR
201	OC		+ -		NR	+ -	NR	NR	+ -	NR
202	EC		+ -		NR	+ -	NR	NR	+ -	NR
203	SO4		+ -		NR	+ -	NR	NR	+ -	NR
204	NO3		+ -		NR	+ -	NR	NR	+ -	NR
SUM(%)		0.000			38.910			38.910		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : AVERAGE VALUE FROM SEVEN LOCATIONS NEAR AROUND PASADENA. ANALYTICAL METHODS UNKNOWN. REF. 30

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41316	30	SOIL DUST	S.K. FRIEDLANDER,"CHEMICAL ELEMENT BALANCES	UNSPECIFIED ANALYSIS OF SOILS IN AND AROUND
41316		CALIF.	AND IDENTIFICATION OF AIR POLLUTION	PASADENA, CAL.
41316			SOURCES," ES&T. MARCH 1973.	
41316				

13-Jun-85 SOURCE LIBRARY

SOURCE: SOIL DUST - MEDFORD, OR.
SCC: NONE
CONTROLS: NOT APPLICABLE

PROFILE: 41318
RANKING: 3328
RATING : B

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	1.500	+ -	0.500	1.700	+ -	0.400	NA	+ -	NR
12	MG	1.900	+ -	0.600	1.500	+ -	0.300	NA	+ -	NR
13	AL	9.500	+ -	0.100	8.900	+ -	0.200	NA	+ -	NR
14	SI	26.600	+ -	1.400	2.700	+ -	1.400	NA	+ -	NR
15	P	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
16	S	0.090	+ -	0.040	0.070	+ -	0.050	NA	+ -	NR
17	CL	0.070	+ -	0.050	NA	+ -	NR	NA	+ -	NR
19	K	0.920	+ -	0.330	0.750	+ -	0.160	NA	+ -	NR
20	CA	1.800	+ -	0.400	1.800	+ -	0.200	NA	+ -	NR
21	SC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
22	TI	1.000	+ -	0.100	0.700	+ -	0.200	NA	+ -	NR
23	V	0.024	+ -	NR	0.033	+ -	NR	NA	+ -	NR
24	CR	0.024	+ -	NR	0.026	+ -	NR	NA	+ -	NR
25	MN	0.160	+ -	0.070	0.180	+ -	0.050	NA	+ -	NR
26	FE	5.300	+ -	0.600	5.500	+ -	0.800	NA	+ -	NR
27	CO	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
28	NI	0.007	+ -	0.003	0.007	+ -	0.003	NA	+ -	NR
29	CU	0.030	+ -	0.020	0.030	+ -	NR	NA	+ -	NR
30	ZN	0.009	+ -	0.003	0.011	+ -	NR	NA	+ -	NR
31	GA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
35	BR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
37	RB	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
40	ZR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
47	AG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	NA	+ -	NR
50	SN	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
55	CS	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
82	PB	0.011	+ -	NR	NA	+ -	NR	NA	+ -	NR
201	OC	4.400	+ -	1.700	3.700	+ -	0.700	NA	+ -	NR
202	EC	0.600	+ -	0.400	0.700	+ -	0.700	NA	+ -	NR
203	SO4	0.100	+ -	0.040	0.060	+ -	0.060	NA	+ -	NR
204	NO3	0.100	+ -	0.040	NA	+ -	NR	NA	+ -	NR
SUM(%)		54.055			28.297			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 45.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41318	45	SOIL DUST	R.T.DECESAR AND J.A. COOPER,"MEDFORD AEROSOL	COMPOSITE SOIL SAMPLES FROM MEDFORD, OREGON
41318		OREGON	CHARACTERIZATION STUDY," REPORT TO THE	RESUSPENDED AND SAMPLED USING A TWO-STAGE
41318			OREGON DEPT. ENVIRON. QUALITY. OREGON	VIRTUAL IMPACTOR.
41318			GRADUATE CENTER (1980)	
41318				

SOURCE: SOIL DUST- PORTLAND, OREGON
SCC: NONE
CONTROLS: NONE

PROFILE: 41319
RANKING: 3338
RATING : A

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	0.010	0.002	+ -	NR		+ -	
11	NA	0.690	+ -	0.380	1.300	+ -	0.500		+ -	
12	MG	1.760	+ -	0.620	1.200	+ -	0.310		+ -	
13	AL	11.700	+ -	2.200	7.200	+ -	1.700		+ -	
14	SI	25.400	+ -	3.400	29.700	+ -	1.500		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.070	+ -	0.030	<	+ -	NR		+ -	
17	CL	<	+ -	0.010	<	+ -	0.010		+ -	
19	K	1.000	+ -	0.280	2.200	+ -	0.240		+ -	
20	CA	0.930	+ -	0.370	1.400	+ -	0.670		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.760	+ -	0.240	0.820	+ -	0.150		+ -	
23	V	0.025	+ -	0.006	0.017	+ -	0.006		+ -	
24	CR	0.030	+ -	0.008	0.010	+ -	0.006		+ -	
25	MN	0.200	+ -	0.090	0.085	+ -	0.028		+ -	
26	FE	6.800	+ -	2.300	4.760	+ -	0.850		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	0.004	0.009	+ -	0.004		+ -	
29	CU	0.020	+ -	0.004	0.020	+ -	0.004		+ -	
30	ZN	0.041	+ -	0.026	0.041	+ -	0.026		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	0.010	<	+ -	0.010		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.006	+ -	0.002	0.042	+ -	0.011		+ -	
201	OC	4.320	+ -	1.700	4.320	+ -	1.730		+ -	
202	EC	0.590	+ -	0.380	0.590	+ -	0.380		+ -	
203	SO4	NA	+ -	0.050	0.004	+ -	0.001		+ -	
204	NO3	NA	+ -	1.000	0.009	+ -	0.005		+ -	
SUM(%)		54.342			53.729			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :REF. 46. ORIGIONAL OC,EC DATA CORRECTED BY SHAH (REF. 54).

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41319	46,54	SOIL DUST	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	COMPOSITE OF SOIL REPRESENTATIVE OF
41319		OREGON	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	PORTLAND, OREGON. SAMPLES WERE SUSPENDED
41319			FINE AND TOTAL SUSPENDED PARTICULATE MATTER	AND SAMPLED WITH A TWO-STAGE VIRTUAL
41319			IN PORTLAND,OREGON," PHD THESIS. OREGON	IMPACTOR.
41319			GRADUATE CENTER(1979)	
41319			AND	
41319			JITENDRA J. SHAH,"MEASUREMENTS OF	PROFILES DEVELOPED DURING THE PACS STUDY
41319			CARBONACEOUS AEROSOL ACROSS THE U.S.: SOURCES	WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
41319			AND ROLE IN VISIBILITY DEGREDATION,"PHD	(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
41319			THESIS,OREGON GRADUATE CENTER. MAY,1981.	NO DILUTION AIR. UPPER CUT POINT ABOUT 20
41319			TABLE A.2.	UM,D50. ANALYSIS BY XRF AND INNA, IC AND
41319				CARBON OXIDATION (CORRECTED FOR ARTIFACT EC).
41319				SINCE NO DILUTION AIR WAS USED DURING
41319				SAMPLING, THE PACS PROFILES TEND TO
41319				UNDERESTIMATE ORGANIC CARBON.
41319				

21-Jun-85

SOURCE LIBRARY

SOURCE: SOIL DUST - ALABAMA
SCC: NONE
CONTROLS: NONE

PROFILE: 41320
RANKING: 3321
RATING : C

			FINE			COARSE			TSP	
SPECIES	SPECIES	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	1.500	+ -	0.500	1.700	+ -	0.400		+ -	
12	MG	1.900	+ -	0.600	1.500	+ -	0.300		+ -	
13	AL	9.500	+ -	0.100	8.900	+ -	0.200		+ -	
14	SI	26.600	+ -	1.400	27.000	+ -	1.400		+ -	
15	P	NA	+ -	NR	NA	+ -	NR		+ -	
16	S	0.090	+ -	0.040	0.070	+ -	0.050		+ -	
17	CL	0.070	+ -	0.050	NA	+ -	NR		+ -	
19	K	0.920	+ -	0.330	0.750	+ -	0.160		+ -	
20	CA	1.800	+ -	0.400	1.800	+ -	0.200		+ -	
21	SC	NA	+ -	NR	NA	+ -	NR		+ -	
22	TI	1.000	+ -	0.100	0.700	+ -	0.200		+ -	
23	V	0.024	+ -	NR	0.033	+ -	NR		+ -	
24	CR	0.024	+ -	NR	0.026	+ -	NR		+ -	
25	MN	0.160	+ -	0.070	0.180	+ -	0.050		+ -	
26	FE	5.300	+ -	0.600	5.500	+ -	0.800		+ -	
27	CO	NA	+ -	NR	NA	+ -	NR		+ -	
28	NI	0.007	+ -	0.003	0.007	+ -	0.003		+ -	
29	CU	0.030	+ -	0.030	0.030	+ -	NR		+ -	
30	ZN	0.009	+ -	0.003	0.011	+ -	NR		+ -	
31	GA	NA	+ -	NR	NA	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	NA	+ -	NR	NA	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	NA	+ -	NR	NA	+ -	NR		+ -	
47	AG	NA	+ -	NR	NA	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	NA	+ -	NR	NA	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	NA	+ -	NR	NA	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.011	+ -	NR	NA	+ -	NR		+ -	
201	OC	4.400	+ -	1.700	3.700	+ -	0.700		+ -	
202	EC	0.600	+ -	0.400	0.700	+ -	0.700		+ -	
203	SO4	0.100	+ -	0.040	0.060	+ -	0.060		+ -	
204	NO3	0.100	+ -	0.040	NA	+ -	NR		+ -	
SUM(%)		54.055			52.597			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : REF. 48.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41320	48	SOIL DUST	J.A. COOPER,"DETERMINATION OF SOURCE	ALABAMA ROAD DUST RESUSPENDED AND SAMPLED
41320		ALABAMA	CONTRIBUTIONS TO FINE AND COURSE SUSPENDED	WITH A DICHOTOMOUS SAMPLER.
41320			PARTICULATE LEVELS IN PETERSVILLE, ALABAMA,"	
41320			REPORT TO TVA. NEA,INC. (1981)	
41320				

SOURCE: ROAD SAND AND SALT MIXTURE
SCC: NONE
CONTROLS: NOT APPLICABLE

PROFILE: 41401
RANKING: 3321
RATING : C

			FINE			COARSE			TSP	
SPECIES NUMBER	SPECIES NAME	********* % BY WT	<2.5 UM + -	****** UNC	********* % BY WT	2.5-10UM +-	****** UNC	********* % BY WT	<30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	13.453	+ -	1.345	7.848	+ -	0.785	8.638	+ -	0.864
14	SI	33.403	+ -	3.340	20.909	+ -	2.091	23.964	+ -	2.396
15	P	0.393	+ -	0.039	0.260	+ -	0.026	0.260	+ -	0.026
16	S	0.977	+ -	0.105	0.706	+ -	0.071	0.754	+ -	0.075
17	CL	8.375	+ -	0.837	8.832	+ -	0.883	10.095	+ -	1.009
19	K	1.425	+ -	0.142	1.194	+ -	0.119	1.191	+ -	0.119
20	CA	3.735	+ -	0.373	2.387	+ -	0.239	2.388	+ -	0.239
21	SC	<	+ -	NR	<	+ -	NR	<	+ -	NR
22	TI	0.385	+ -	0.038	0.353	+ -	0.035	0.388	+ -	0.039
23	V	0.030	+ -	NR	0.022	+ -	NR	0.023	+ -	NR
24	CR	0.037	+ -	NR	0.025	+ -	NR	0.025	+ -	NR
25	MN	0.122	+ -	0.012	0.087	+ -	NR	0.089	+ -	NR
26	FE	4.970	+ -	0.497	3.775	+ -	0.377	4.059	+ -	0.406
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	0.020	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	0.292	+ -	0.029	0.169	+ -	0.017	0.151	+ -	0.015
30	ZN	0.253	+ -	0.025	0.123	+ -	0.012	0.052	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.016	+ -	NR	<	+ -	NR	<	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	0.027	+ -	NR	0.021	+ -	NR	0.026	+ -	NR
40	PD	0.036	+ -	0.023	<	+ -	NR	<	+ -	NR
47	AG	0.057	+ -	0.031	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	0.044	<	+ -	NR	<	+ -	NR
50	IN	<	+ -	0.052	<	+ -	NR	<	+ -	NR
51	SN	0.032	+ -	0.058	<	+ -	NR	<	+ -	NR
55	SB	<	+ -	0.107	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	0.285	<	+ -	NR	<	+ -	0.027
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.253	+ -	0.027	0.107	+ -	0.011	0.049	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		68.291			46.818			52.152		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :STATE OF MONTANA. REF. 43.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
41401	43	ROAD SAND	J.E.HOUCH,ET.AL.,"EAST HELENA SOURCE	WINTER ROAD SANDING AND SALTING MIXTURE.
41401		& SALT	APPORTIONMENT STUDY,"DRAFT FINAL REPORT TO	SAMPLE SIEVED AND RESUSPENDED.
41401			THE STATE OF MONTANA. NEA, INC.(1982)	
41401				

13-Jun-85

SOURCE LIBRARY

SOURCE: WOOD STOVES-PINE FUEL
SCC: NONE
CONTROLS: NONE

PROFILE: 42101
RANKING: 3338
RATING : A

SPECIES NUMBER	SPECIES NAME	********* % BY WT	<2.5 UM +-	****** UNC	********* % BY WT	<2.5 UM +-	****** UNC	********* % BY WT	<2.5 UM +-	****** UNC
4	BE	NA	+ -	NR		+ -			+ -	
5	B	NA	+ -	NR		+ -			+ -	
9	F	NA	+ -	NR		+ -			+ -	
11	NA	NA	+ -	NR		+ -			+ -	
12	MG	NA	+ -	NR		+ -			+ -	
13	AL	NR	+ -	NR		+ -			+ -	
14	SI	NR	+ -	NR		+ -			+ -	
15	P	NR	+ -	NR		+ -			+ -	
16	S	0.100	+ -	NR		+ -			+ -	
17	CL	0.100	+ -	NR		+ -			+ -	
19	K	1.000	+ -	NR		+ -			+ -	
20	CA	<	+ -	NR		+ -			+ -	
21	SC	<	+ -	NR		+ -			+ -	
22	TI	<	+ -	NR		+ -			+ -	
23	V	<	+ -	NR		+ -			+ -	
24	CR	<	+ -	NR		+ -			+ -	
25	MN	<	+ -	NR		+ -			+ -	
26	FE	<	+ -	NR		+ -			+ -	
27	CO	<	+ -	NR		+ -			+ -	
28	NI	<	+ -	NR		+ -			+ -	
29	CU	<	+ -	NR		+ -			+ -	
30	ZN	<	+ -	NR		+ -			+ -	
31	GA	<	+ -	NR		+ -			+ -	
32	GE	<	+ -	NR		+ -			+ -	
33	AS	<	+ -	NR		+ -			+ -	
34	SE	<	+ -	NR		+ -			+ -	
35	BR	<	+ -	NR		+ -			+ -	
37	RB	<	+ -	NR		+ -			+ -	
38	SR	<	+ -	NR		+ -			+ -	
40	ZR	<	+ -	NR		+ -			+ -	
47	AG	<	+ -	NR		+ -			+ -	
48	CD	<	+ -	NR		+ -			+ -	
50	SN	<	+ -	NR		+ -			+ -	
51	SB	<	+ -	NR		+ -			+ -	
55	CS	<	+ -	NR		+ -			+ -	
56	BA	<	+ -	NR		+ -			+ -	
58	CE	<	+ -	NR		+ -			+ -	
80	HG	<	+ -	NR		+ -			+ -	
82	PB	<	+ -	NR		+ -			+ -	
201	OC	38.700	+ -	NR		+ -			+ -	
202	EC	4.500	+ -	NR		+ -			+ -	
203	SO4	NA	+ -	NR		+ -			+ -	
204	NO3	NA	+ -	NR		+ -			+ -	
SUM(%)		44.400			0.000	+ -		0.000	+ -	

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : VALUES REPORTED ARE EMISSION WEIGHTED VALUES CALCULATED FROM EARLY, MIDDLE AND LATE - STAGE EMISSION PROFILES. REF. 33.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42101	33	WOOD	D. C. STILES, "EVALUATION OF AN S2 SAMPLER	PROFILES DEVELOPED FROM WOODSTOVE BURNING OF
42101		STOVES	FOR RECEPTOR MODELING OF WOODSTOVE	PINE WOOD WITH 10% MOISTURE.
42101			EMISSIONS, " PROCEEDINGS OF THE 76TH ANNUAL	SIZE-RESOLVED SAMPLES (FINE, ONLY) TAKEN
42101			MEETING, APCA (1983). PAPER 83-54.8.	USING A DILUTION TUNNEL. XRF AND CARBON
42101				OXIDATION ANALYSIS.LESS THAN VALUES ARE <0.1%
42101				FUELS PROFILE BASED ON EMISSION WEIGHED
42101				AVERAGE OF 6 SAMPLES.
42101				
42101				

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13-Jun-85                                        SOURCE LIBRARY

              SOURCE:   WOOD STOVES-AVERAGE, ALL FUELS                                PROFILE:     42102
              SCC:      NONE                                                          RANKING:      3338
              CONTROLS: NONE                                                          RATING :         A
-----------------------------------------------------------------------------------------------------------------
 SPECIES    SPECIES  *********  <2.5 UM  ******    *********   <2.5 UM ******    ********* <2.5 UM  ******
 NUMBER      NAME    % BY WT     + -      UNC      % BY WT       +-     UNC       % BY WT    +-     UNC
 -------     -----   ---------  -------  -----     ---------   -------- ------    --------- -----   ------
       4      BE        NA       + -      NR                     + -                         + -
       5      B         NA       + -      NR                     + -                         + -
       9      F         NA       + -      NR                     + -                         + -
      11      NA        NA       + -      NR                     + -                         + -
      12      MG        NA       + -      NR                     + -                         + -
      13      AL        NR       + -      NR                     + -                         + -
      14      SI        NR       + -      NR                     + -                         + -
      15      P         NR       + -      NR                     + -                         + -
      16      S       1.800      + -      NR                     + -                         + -
      17      CL      0.800      + -      NR                     + -                         + -
      19      K       8.000      + -      NR                     + -                         + -
      20      CA        <        + -      NR                     + -                         + -
      21      SC        <        + -      NR                     + -                         + -
      22      TI        <        + -      NR                     + -                         + -
      23      V         <        + -      NR                     + -                         + -
      24      CR        <        + -      NR                     + -                         + -
      25      MN        <        + -      NR                     + -                         + -
      26      FE        <        + -      NR                     + -                         + -
      27      CO        <        + -      NR                     + -                         + -
      28      NI        <        + -      NR                     + -                         + -
      29      CU        <        + -      NR                     + -                         + -
      30      ZN        <        + -      NR                     + -                         + -
      31      GA        <        + -      NR                     + -                         + -
      32      GE        <        + -      NR                     + -                         + -
      33      AS        <        + -      NR                     + -                         + -
      34      SE        <        + -      NR                     + -                         + -
      35      BR        <        + -      NR                     + -                         + -
      37      RB        <        + -      NR                     + -                         + -
      38      SR        <        + -      NR                     + -                         + -
      40      ZR        <        + -      NR                     + -                         + -
      47      AG        <        + -      NR                     + -                         + -
      48      CD        <        + -      NR                     + -                         + -
      50      SN        <        + -      NR                     + -                         + -
      51      SB        <        + -      NR                     + -                         + -
      55      CS        <        + -      NR                     + -                         + -
      56      BA        <        + -      NR                     + -                         + -
      58      CE        <        + -      NR                     + -                         + -
      80      HG        <        + -      NR                     + -                         + -
      82      PB        <        + -      NR                     + -                         + -
     201      OC     35.900      + -      NR                     + -                         + -
     202      EC      6.400      + -      NR                     + -                         + -
     203      SO4       NA       + -      NR                     + -                         + -
     204      NO3       NA       + -      NR                     + -                         + -
 SUM( % )            52.900                         0.000                         0.000

 NOTES:   OC = ORGANIC CARBON :  EC = ELEMENTAL CARBON :  NA = NOT ANALYZED :  NR = NOT REPORTED
          < = LESS THAN DETECTION LIMIT
          OTHER NOTES :      VALUES REPORTED ARE EMISSION WEIGHTED VALUES CALCULATED FROM EARLY, MIDDLE
                             AND LATE - STAGE EMISSION PROFILES. REF. 33.
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SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42102	33	WOOD	D. C. STILES, "EVALUATION OF AN S2 SAMPLER	PROFILES DEVELOPED FROM WOODSTOVE BURNING OF
42102		STOVE	FOR RECEPTOR MODELING OF WOODSTOVE	PINE,POPLAR,SWEET GUM AND OAK WOOD.
42102			EMISSIONS, " PROCEEDINGS OF THE 76TH ANNUAL	SIZE-RESOLVED SAMPLES (FINE, ONLY) TAKEN
42102			MEETING, APCA (1983). PAPER 83-54.8.	USING A DILUTION TUNNEL. XRF AND CARBON
42102				OXIDATION ANALYSIS.LESS THAN VALUES ARE <0.1%
42102				FUELS PROFILE BASED ON EMISSION WEIGHED
42102				AVERAGE OF 41 SAMPLES.
42102				

SOURCE LIBRARY

SOURCE: WOOD STOVES-OAK FUEL
SCC: NONE
CONTROLS: NONE

PROFILE: 42103
RANKING: 3338
RATING : A

SPECIES NUMBER	SPECIES NAME	*********	<2.5 UM	******	*********	<2.5 UM	******	*********	<2.5 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR		+ -			+ -	
5	B	NA	+ -	NR		+ -			+ -	
9	F	NA	+ -	NR		+ -			+ -	
11	NA	NA	+ -	NR		+ -			+ -	
12	MG	NA	+ -	NR		+ -			+ -	
13	AL	NR	+ -	NR		+ -			+ -	
14	SI	NR	+ -	NR		+ -			+ -	
15	P	NR	+ -	NR		+ -			+ -	
16	S	1.600	+ -	NR		+ -			+ -	
17	CL	1.800	+ -	NR		+ -			+ -	
19	K	7.700	+ -	NR		+ -			+ -	
20	CA	<	+ -	NR		+ -			+ -	
21	SC	<	+ -	NR		+ -			+ -	
22	TI	<	+ -	NR		+ -			+ -	
23	V	<	+ -	NR		+ -			+ -	
24	CR	<	+ -	NR		+ -			+ -	
25	MN	<	+ -	NR		+ -			+ -	
26	FE	<	+ -	NR		+ -			+ -	
27	CO	<	+ -	NR		+ -			+ -	
28	NI	<	+ -	NR		+ -			+ -	
29	CU	<	+ -	NR		+ -			+ -	
30	ZN	<	+ -	NR		+ -			+ -	
31	GA	<	+ -	NR		+ -			+ -	
32	GE	<	+ -	NR		+ -			+ -	
33	AS	<	+ -	NR		+ -			+ -	
34	SE	<	+ -	NR		+ -			+ -	
35	BR	<	+ -	NR		+ -			+ -	
37	RB	<	+ -	NR		+ -			+ -	
38	SR	<	+ -	NR		+ -			+ -	
40	ZR	<	+ -	NR		+ -			+ -	
47	AG	<	+ -	NR		+ -			+ -	
48	CD	<	+ -	NR		+ -			+ -	
50	SN	<	+ -	NR		+ -			+ -	
51	SB	<	+ -	NR		+ -			+ -	
55	CS	<	+ -	NR		+ -			+ -	
56	BA	<	+ -	NR		+ -			+ -	
58	CE	<	+ -	NR		+ -			+ -	
80	HG	<	+ -	NR		+ -			+ -	
82	PB	<	+ -	NR		+ -			+ -	
201	OC	29.200	+ -	NR		+ -			+ -	
202	EC	7.200	+ -	NR		+ -			+ -	
203	SO4	NA	+ -	NR		+ -			+ -	
204	NO3	NA	+ -	NR		+ -			+ -	
SUM(%)		47.500			0.000			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : VALUES REPORTED ARE EMISSION WEIGHTED VALUES CALCULATED FROM EARLY, MIDDLE AND LATE - STAGE EMISSION PROFILES. REF. 33.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42103	33	WOOD	D. C. STILES, "EVALUATION OF AN S2 SAMPLER	PROFILES DEVELOPED FROM WOODSTOVE BURNING OF
42103		STOVES	FOR RECEPTOR MODELING OF WOODSTOVE	10% MOISTURE OAK WOOD.
42103			EMISSIONS, " PROCEEDINGS OF THE 76TH ANNUAL	SIZE-RESOLVED SAMPLES (FINE, ONLY) TAKEN
42103			MEETING, APCA (1983). PAPER 83-54.8.	USING A DILUTION TUNNEL. XRF AND CARBON
42103				OXIDATION ANALYSIS.LESS THAN VALUES ARE <0.1%
42103				FUELS PROFILE BASED ON EMISSION WEIGHED
42103				AVERAGE OF 6 SAMPLES.
42103				

13-Jun-85

SOURCE LIBRARY

SOURCE: FIREPLACES -SOFTWOODS
SCC: NONE
CONTROLS: NONE

PROFILE: 42201
RANKING: 2224
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
14	SI	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
15	P	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
16	S	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
17	CL	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
19	K	0.606	+ -	NR	0.606	+ -	NR	0.606	+ -	NR
20	CA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
21	SC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
22	TI	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
23	V	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
24	CR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
25	MN	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
26	FE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
27	CO	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
28	NI	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
29	CU	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
30	ZN	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
31	GA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
32	GE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
33	AS	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
34	SE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
35	BR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
37	RB	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
38	SR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
40	ZR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
47	AG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
48	CD	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
50	SN	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
51	SB	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
55	CS	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
56	BA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
58	CE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
80	HG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
82	PB	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
201	OC	38.000	+ -	6.000	38.000	+ -	6.000	38.000	+ -	6.000
202	EC	33.000	+ -	13.00	33.000	+ -	13.00	33.000	+ -	13.00
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		71.606			71.606			71.606		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : EC, OC MEAN AND STD. DEV. VALUES FROM 7 SOURCE TESTS.K VALUES
AVERAGE OF 3 TESTS. PROFILES ALL ASSUMED SIMILAR BASED ON SIZE DISTRIBUTION. REF. 34

13-Jun-85

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42201	34	FIREPLACE	J. M. DASCH, "PARTICULATE AND GASEOUS	EC AND OC ANALYSIS OF 7 SOFTWOOD AND 14
42201		SOFTWOOD	EMISSIONS FROM WOOD-BURNING FIREPLACES," ES	HARDWOOD TESTS USING METHOD 5 TRAIN. FRONT
42201			AND T , 16:10 (1982).	AND BACKHALF FRACTIONS SOFTWOODS. INCLUDED
42201			AND	PINE, SPRUCE AND CEDAR. POTASSIUM VALUES
42201			J.L. MAHLBAIER, " A CHARACTERIZATION OF	FROM AN AVERAGE OF 3 TESTS BURNING PINE AND
42201			EMISSIONS FROM WOOD-BURNING FIREPLACES,"	SPRUCE NO OTHER TRACE ELEMENTS MEASURED.
42201			GENERAL MOTORS RESEARCH LAB REPORT GMR-3730.	
42201			(1981)	
42201				

SOURCE: FIREPLACES - HARDWOODS
SCC: NONE
CONTROLS: NONE

PROFILE: 42202
RANKING: 2224
RATING : C

SPECIES NUMBER	SPECIES NAME	FINE <2.5 UM % BY WT	+-	UNC	COARSE 2.5-10UM % BY WT	+-	UNC	TSP <30 UM % BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
14	SI	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
15	P	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
16	S	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
17	CL	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
19	K	1.030	+ -	NR	1.030	+ -	NR	1.030	+ -	NR
20	CA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
21	SC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
22	TI	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
23	V	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
24	CR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
25	MN	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
26	FE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
27	CO	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
28	NI	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
29	CU	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
30	ZN	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
31	GA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
32	GE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
33	AS	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
34	SE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
35	BR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
37	RB	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
38	SR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
40	ZR	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
47	AG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
48	CD	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
50	SN	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
51	SB	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
55	CS	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
56	BA	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
58	CE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
80	HG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
82	PB	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
201	OC	46.000	+ -	7.000	46.000	+ -	7.000	46.000	+ -	7.000
202	EC	8.000	+ -	7.000	8.000	+ -	7.000	8.000	+ -	7.000
203	SO4	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		55.030			55.030			55.030		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : EC AND OC VALUES AVERAGE AND STD. DEV. OF 14 TESTS. K VALUES MEAN OF THREE TESTS. ALL PROFILES ASSUMED SIMILAR BASED ON SIZE DISTRIBUTION. REF. 34.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42202	34	FIREPLACE	J. M. DASCH, "PARTICULATE AND GASEOUS	EC AND OC ANALYSIS OF 14 SOURCE TESTS
42202		HARDWOOD	EMISSIONS FROM WOOD-BURNING FIREPLACES," ES	BURNING HARDWOODS (MAPLE, OAK, ASH AND
42202			AND T , 16:10 (1982).	ELM). SEE PROFILE 42201. POTASSIUM VALUES
42202			AND	AVERAGE OF 3 RED OAK TESTS. AUTHOR REPORTS
42202			J.L. MAHLBAIER, " A CHARACTERIZATION OF	HIGHER K VALUES IN HARDWOODS THAN
42202			EMISSIONS FROM WOOD-BURNING FIREPLACES,"	SOFTWOODS. SYNTHETIC LOGS EMISSIONS
42202			GENERAL MOTORS RESEARCH LAB REPORT GMR-3730.	REPORTED AS 49+-2% OC AND 15+-5% EC.
42202			(1981)	
42202				

13-Jun-85

SOURCE LIBRARY

SOURCE: SLASH BURNING
SCC: NONE
CONTROLS: NONE

PROFILE: 42301
RANKING: 3218
RATING : B

SPECIE NUMBER	SPECIE NAME	*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
		% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
11	NA	0.067	+ -	0.149	0.067	+ -	0.149	0.067	+ -	0.149
12	MG	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
13	AL	0.455	+ -	0.298	0.455	+ -	0.298	0.455	+ -	0.298
14	SI	0.802	+ -	0.633	0.802	+ -	0.633	0.802	+ -	0.633
15	P	<	+ -	NR	<	+ -	NR	<	+ -	NR
16	S	0.281	+ -	0.220	0.281	+ -	0.220	0.281	+ -	0.220
17	CL	0.016	+ -	0.041	0.016	+ -	0.041	0.016	+ -	0.041
19	K	0.442	+ -	0.202	0.442	+ -	0.202	0.442	+ -	0.202
20	CA	0.713	+ -	0.962	0.713	+ -	0.962	0.713	+ -	0.962
21	SC	<	+ -	0.000	<	+ -	0.000	<	+ -	0.000
22	TI	0.010	+ -	0.017	0.010	+ -	0.017	0.010	+ -	0.017
23	V	<	+ -	NR	<	+ -	NR	<	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	<	+ -	NR
25	MN	0.080	+ -	0.095	0.080	+ -	0.095	0.080	+ -	0.095
26	FE	0.342	+ -	0.255	0.342	+ -	0.255	0.342	+ -	0.255
27	CO	<	+ -	NR	<	+ -	NR	<	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	<	+ -	NR
29	CU	0.001	+ -	0.003	0.001	+ -	0.003	0.001	+ -	0.003
30	ZN	0.012	+ -	0.012	0.012	+ -	0.012	0.012	+ -	0.012
31	GA	<	+ -	NR	<	+ -	NR	<	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	<	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	<	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	<	+ -	NR
35	BR	0.010	+ -	0.010	0.010	+ -	0.010	0.010	+ -	0.010
37	RB	<	+ -	NR	<	+ -	NR	<	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	<	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	<	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	<	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	<	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	<	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	<	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	<	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	<	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	<	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	<	+ -	NR
82	PB	0.006	+ -	0.009	0.006	+ -	0.009	0.006	+ -	0.009
200	TC	80.604	+ -	6.215	80.604	+ -	6.215	80.604	+ -	6.215
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	0.637	+ -	0.373	0.637	+ -	0.373	0.637	+ -	0.373
204	NO3	1.056	+ -	1.248	1.056	+ -	1.248	1.056	+ -	1.248
206	NH4	0.708	+ -	0.452	0.708	+ -	0.452	0.708	+ -	0.452
SUM(%)		86.240			86.240			86.240		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON TC = TOTAL CARBON NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT NA = NOT ANALYZED
OTHER NOTES : MEAN AND STANDARD DEVIATION OF 8 FINE FRACTION SAMPLES. COMPOSITION OF ALL SIZE FRACTIONS ASSUMED SIMILAR. REF: OREGON DEPT. ENV. QUALITY

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42301	PERSONAL	SLASH	PERSONAL COMMUNICATIONS, STATE OF OREGON	MEAN AND STANDARD DEVIATION VALUES OF 8 FINE
42301	COMM.	BURNING	DEPT. ENVIRON. QUALITY. OCT. 7,1983. CAROL	PARTICLE SLASH BURNING SAMPLES OBTAINED
42301			CUMMINGS.	FROM ER &T AMBIENT SAMPLERS LOCATED IN
42301				PLUME AT GROUND LEVEL. ANALYZED BY AAS,
42301				XRF,ION CHROMATOGRAPHY AND CARBON OXIDATION.
42301				THREE SMOLDER PHASE AND 5 ACTIVE BURN PHASE
42301				SAMPLES.
42301				

SOURCE: SLASH BURNING
SCC: 5-03-002-01
CONTROLS: NONE

PROFILE: 42302
RANKING: 21324
RATING : B

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	0.096	+ -	0.035	NA	+ -	NR		+ -	
12	MG	NA	+ -	NR	NA	+ -	NR		+ -	
13	AL	0.144	+ -	0.066	0.705	+ -	0.205		+ -	
14	SI	0.132	+ -	0.041	0.930	+ -	0.099		+ -	
15	P	NA	+ -	NR	NA	+ -	NR		+ -	
16	S	0.132	+ -	0.050	0.990	+ -	0.438		+ -	
17	CL	0.258	+ -	0.118	0.850	+ -	1.200		+ -	
19	K	0.620	+ -	0.235	1.250	+ -	0.212		+ -	
20	CA	0.868	+ -	0.288	5.500	+ -	0.600		+ -	
21	SC	NA	+ -	NR	NA	+ -	NR		+ -	
22	TI	NA	+ -	NR	0.045	+ -	0.064		+ -	
23	V	<	+ -	NR	<	+ -	NR		+ -	
24	CR	NA	+ -	NR	0.062	+ -	0.025		+ -	
25	MN	0.280	+ -	0.120	1.450	+ -	0.212		+ -	
26	FE	0.064	+ -	0.042	0.430	+ -	0.156		+ -	
27	CO	NA	+ -	NR	NA	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	<	+ -	NR	<	+ -	NR		+ -	
30	ZN	0.022	+ -	0.016	0.052	+ -	0.025		+ -	
31	GA	NA	+ -	NR	NA	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.021	+ -	NR	0.112	+ -	0.067		+ -	
37	RB	NA	+ -	NR	NA	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	NA	+ -	NR	NA	+ -	NR		+ -	
47	AG	NA	+ -	NR	NA	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	NA	+ -	NR	NA	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	NA	+ -	NR	NA	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	<	+ -	NR	<	+ -	NR		+ -	
201	OC	59.250	+ -	10.56	59.000	+ -	10.00		+ -	
202	EC	9.750	+ -	3.590	10.000	+ -	3.000		+ -	
203	SO4	0.328	+ -	0.089	0.130	+ -	0.184		+ -	
206	NH4	0.220	+ -	0.080	1.000	+ -	0.560		+ -	
SUM(%)		72.053			81.516			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : PERSONAL COMMUNICATIONS, OREGON DEPT. ENVIRONMENTAL QUALITY.

21-Jun-85

SOURCE LIBRARY

SOURCE: ORCHARD HEATING - SMUDGE POTS
SCC: NONE
CONTROLS: NONE

PROFILE: 43302
RANKING: 2324
RATING : B

SPECIE NUMBER	SPECIE NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	NA	+ -	NR	NA	+ -	NR		+ -	
12	MG	0.120	+ -	0.071	0.120	+ -	0.071		+ -	
13	AL	0.035	+ -	0.020	0.035	+ -	0.020		+ -	
14	SI	0.060	+ -	0.085	0.060	+ -	0.085		+ -	
15	P	NA	+ -	NR	NA	+ -	NR		+ -	
16	S	0.890	+ -	0.100	0.890	+ -	0.100		+ -	
17	CL	<	+ -	NR	<	+ -	NR		+ -	
19	K	<	+ -	NR	<	+ -	NR		+ -	
20	CA	<	+ -	NR	<	+ -	NR		+ -	
21	SC	NA	+ -	NR	NA	+ -	NR		+ -	
22	TI	<	+ -	NR	<	+ -	NR		+ -	
23	V	<	+ -	NR	<	+ -	NR		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	<	+ -	NR	<	+ -	NR		+ -	
26	FE	<	+ -	NR	<	+ -	NR		+ -	
27	CO	NA	+ -	NR	NA	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	<	+ -	NR	<	+ -	NR		+ -	
30	ZN	0.013	+ -	NR	0.013	+ -	NR		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.006	+ -	0.006	0.006	+ -	0.006		+ -	
37	RB	NA	+ -	NR	NA	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	NA	+ -	NR	NA	+ -	NR		+ -	
47	AG	NA	+ -	NR	NA	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	NA	+ -	NR	NA	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	NA	+ -	NR	NA	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.059	+ -	0.044	0.059	+ -	0.044		+ -	
201	OC	7.200	+ -	3.960	7.200	+ -	3.960		+ -	
202	EC	83.500	+ -	9.000	83.500	+ -	9.000		+ -	
203	SO4	1.800	+ -	1.131	1.800	+ -	1.131		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
206	NH4	1.730	+ -	0.665	1.730	+ -	0.665		+ -	
SUM(%)		92.793			92.793					

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : REF. 45.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42302	45	SLASH	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	AVERAGE OF FIVE FILTERS COLLECTED FROM TWO
42302		BURNING	CHARACTERIZATION STUDY," REPORT TO THE	SLASH BURNS IN OREGON. SAMPLES TAKEN AT
42302			OREGON DEPT. ENVIRON. QUALITY. OREGON	GROUND LEVEL IN THE PLUME OF A SLASH BURN.
42302			GRADUATE CENTER (1980)	
42302				

SOURCE: RESIDENTIAL WOOD COMBUSTION - COMPOSITE
SCC: NONE
CONTROLS: NONE

PROFILE: 42303
RANKING: 2328
RATING : A

			FINE			COARSE			TSP	
SPECIE	SPECIE	*********	<2.5 UM	******	*********	2.5-10UM	******	*********	<30 UM	******
NUMBER	NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	0.083	+ -	0.012	0.083	+ -	0.012		+ -	
12	MG	0.073	+ -	0.017	0.073	+ -	0.017		+ -	
13	AL	0.021	+ -	NR	0.021	+ -	NR		+ -	
14	SI	<	+ -	NR	<	+ -	NR		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.182	+ -	0.019	0.182	+ -	0.019		+ -	
17	CL	0.509	+ -	0.031	0.509	+ -	0.031		+ -	
19	K	0.860	+ -	0.010	0.860	+ -	0.010		+ -	
20	CA	0.067	+ -	NR	0.067	+ -	NR		+ -	
21	SC	NA	+ -	NR	NA	+ -	NR		+ -	
22	TI	<	+ -	NR	<	+ -	NR		+ -	
23	V	<	+ -	NR	<	+ -	NR		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	<	+ -	NR	<	+ -	NR		+ -	
26	FE	<	+ -	NR	<	+ -	NR		+ -	
27	CO	NA	+ -	NR	NA	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	<	+ -	NR	<	+ -	NR		+ -	
30	ZN	0.037	+ -	NR	0.037	+ -	NR		+ -	
31	GA	NA	+ -	NR	NA	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	NA	+ -	NR	NA	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	NA	+ -	NR	NA	+ -	NR		+ -	
47	AG	NA	+ -	NR	NA	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	NA	+ -	NR	NA	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	NA	+ -	NR	NA	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	<	+ -	NR	<	+ -	NR		+ -	
201	OC	47.500	+ -	13.80	47.500	+ -	13.80		+ -	
202	EC	12.800	+ -	8.400	12.800	+ -	8.400		+ -	
203	SO4	0.289	+ -	0.021	0.289	+ -	0.021		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		62.239			62.239					

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : REF. 45.

SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42303	45	RESID	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	COMPOSITE SOURCE PROFILE BASED ON THE MIX OF
42303		WOOD	CHARACTERIZATION STUDY," REPORT TO THE	WOOD BURNED AND TYPE OF COMBUSTION UNIT
42303		COMBUST.	OREGON DEPT. ENVIRON. QUALITY. OREGON	(WOOD STOVE OR FIREPLACE) USED IN MEDFORD,
42303			GRADUATE CENTER (1980)	O IN 1980. AVERAGE OF 16 SAMPLES FROM
42303				8 SOURCES. 45% FIREPLACES, 55% WOOD STOVES
42303				

SOURCE: AGRICULTURAL FIELD BURNING
SCC: 5-03-002-01
CONTROLS: NONE

PROFILE: 42304
RANKING: 2321
RATING : C

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	0.320	+ -	0.150	0.320	+ -	0.150		+ -	
11	NA	0.240	+ -	0.340	0.240	+ -	0.340		+ -	
12	MG	<	+ -	NR	<	+ -	NR		+ -	
13	AL	0.340	+ -	0.300	0.340	+ -	0.300		+ -	
14	SI	0.300	+ -	0.200	0.300	+ -	0.200		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	1.500	+ -	0.700	1.500	+ -	0.700		+ -	
17	CL	3.100	+ -	2.000	3.100	+ -	2.000		+ -	
19	K	5.900	+ -	2.500	5.900	+ -	2.500		+ -	
20	CA	0.400	+ -	0.300	0.400	+ -	0.300		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.005	+ -	0.005	0.005	+ -	0.005		+ -	
23	V	<	+ -	NR	<	+ -	NR		+ -	
24	CR	0.005	+ -	0.007	0.005	+ -	0.007		+ -	
25	MN	0.004	+ -	0.005	0.004	+ -	0.005		+ -	
26	FE	0.200	+ -	0.600	0.200	+ -	0.600		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	0.110	+ -	0.400	0.110	+ -	0.400		+ -	
30	ZN	<	+ -	NR	<	+ -	NR		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	0.030	+ -	0.040	0.030	+ -	0.040		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	<	+ -	NR	<	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	0.030	+ -	0.040	0.030	+ -	0.040		+ -	
201	OC	35.600	+ -	10.75	35.600	+ -	10.75		+ -	
202	EC	5.800	+ -	1.740	5.800	+ -	1.740		+ -	
203	SO4	5.000	+ -	4.300	5.000	+ -	4.300		+ -	
204	NO3	0.890	+ -	0.900	0.890	+ -	0.900		+ -	
SUM(%)		59.774			59.774			0.000		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES :REF. 46.FIELD BURNING OF GRASS SEED STUBBLE.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
42304	46	AGRICUL-	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	AVERAGE OF TEN SAMPLES COLLECTED BY OPEN
42304		TURAL	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	BURNING OF AGRICULTURAL GRASS SEED STUBBLE.
42304		GRASS	FINE AND TOTAL SUSPENDED PARTICULATE MATTER	AIRCRAFT PLUME SAMPLES.
42304		BURNING	IN PORTLAND,OREGON," PHD THESIS. OREGON	
42304			GRADUATE CENTER(1979)	
42304			AND	
42304			JITENDRA J. SHAH,"MEASUREMENTS OF	PROFILES DEVELOPED DURING THE PACS STUDY
42304			CARBONACEOUS AEROSOL ACROSS THE U.S.: SOURCES	WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
42304			AND ROLE IN VISIBILITY DEGREDATION,"PHD	(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
42304			THESIS,OREGON GRADUATE CENTER. MAY,1981.	NO DILUTION AIR. UPPER CUT POINT ABOUT 20
42304			TABLE A.2.	UM,D50. ANALYSIS BY XRF AND INNA, IC AND
42304				CARBON OXIDATION (CORRECTED FOR ARTIFACT EC).
42304				SINCE NO DILUTION AIR WAS USED DURING
42304				SAMPLING, OC, EC TENDS TO BE UNDERESTIMATED.
42304				ORIGIONAL PACS OC,EC DATA REVISED BY SHAW.
42304				
42304				

SOURCE: MARINE AEROSOL
SCC: NONE
CONTROLS: NOT APPLICABLE

PROFILE: 43101
RANKING: 1111
RATING : C

SPECIE NUMBER	SPECIE NAME	FINE <2.5 UM % BY WT	FINE <2.5 UM + -	FINE <2.5 UM UNC	COARSE 2.5-10UM % BY WT	COARSE 2.5-10UM +-	COARSE 2.5-10UM UNC	TSP <30 UM % BY WT	TSP <30 UM +-	TSP <30 UM UNC
4	BE	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
5	B	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
9	F	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
11	NA	40.000	+ -	4.000	40.000	+ -	4.000	NA	+ -	NR
12	MG	4.800	+ -	0.900	4.800	+ -	0.900	NA	+ -	NR
13	AL	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
14	SI	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
15	P	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
16	S	3.300	+ -	1.300	3.300	+ -	1.300	NA	+ -	NR
17	CL	40.000	+ -	10.00	40.000	+ -	10.00	NA	+ -	NR
19	K	1.400	+ -	0.200	1.400	+ -	0.200	NA	+ -	NR
20	CA	1.400	+ -	0.200	1.400	+ -	0.200	NA	+ -	NR
21	SC	<	+ -	NR	<	+ -	NR	NA	+ -	NR
22	TI	<	+ -	NR	<	+ -	NR	NA	+ -	NR
23	V	<	+ -	NR	<	+ -	NR	NA	+ -	NR
24	CR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
25	MN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
26	FE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
27	CO	<	+ -	NR	<	+ -	NR	NA	+ -	NR
28	NI	<	+ -	NR	<	+ -	NR	NA	+ -	NR
29	CU	<	+ -	NR	<	+ -	NR	NA	+ -	NR
30	ZN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
31	GA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
32	GE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
33	AS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
34	SE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
35	BR	0.200	+ -	0.050	0.200	+ -	0.050	NA	+ -	NR
37	RB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
38	SR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
40	ZR	<	+ -	NR	<	+ -	NR	NA	+ -	NR
47	AG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
48	CD	<	+ -	NR	<	+ -	NR	NA	+ -	NR
50	SN	<	+ -	NR	<	+ -	NR	NA	+ -	NR
51	SB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
55	CS	<	+ -	NR	<	+ -	NR	NA	+ -	NR
56	BA	<	+ -	NR	<	+ -	NR	NA	+ -	NR
58	CE	<	+ -	NR	<	+ -	NR	NA	+ -	NR
80	HG	<	+ -	NR	<	+ -	NR	NA	+ -	NR
82	PB	<	+ -	NR	<	+ -	NR	NA	+ -	NR
201	OC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
202	EC	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
203	SO4	10.000	+ -	4.000	10.000	+ -	4.000	NA	+ -	NR
204	NO3	NA	+ -	NR	NA	+ -	NR	NA	+ -	NR
SUM(%)		97.800			97.800					

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : * LITERATURE COMPOSITE, REF. 46

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
43101	46	MARINE	J.G.WATSON,"CHEMICAL ELEMENT BALANCE	ESTIMATE OF MARINE AEROSOL COMPOSITION.
43101		AIR	RECEPTOR MODEL METHODOLOGY FOR SOURCES OF	ASSUMES A CL TO NA RATIO OF ONE AND THAT ALL
43101			FINE AND TOTAL SUSPENDED PARTICULATE MATTER	CONSTITUENTS, ASIDE FROM CL, RETAIN THEIR
43101			IN PORTLAND,OREGON," PHD THESIS. OREGON	BASIC BULK SEA WATER RATIOS. THE ABSOLUTE
43101			GRADUATE CENTER(1979)	VALUES WERE ESTABLISHED BY NORMALIZING ALL
43101				VALUES TO 100%.
43101				
43101				PROFILES DEVELOPED DURING THE PACS STUDY
43101				WERE TAKEN WITH A 2 STAGE VIRTUAL IMPACTOR
43101				(2.0 UM D50) WITH A METHOD 5 HEATED PROBE.
43101				NO DILUTION AIR. UPPER CUT POINT ABOUT 20
43101				UM,D50. ANALYSIS BY XRF AND INNA, IC AND
43101				CARBON OXIDATION (CORRECTED FOR ARTIFACT EC).
43101				SINCE NO DILUTION AIR WAS USED DURING
43101				SAMPLING, THE PACS PROFILES TEND TO
43101				UNDERESTIMATE ORGANIC CARBON.
43101				

13-Jun-85

SOURCE LIBRARY

SOURCE: RESIDENTIAL SPACE HEATING-COAL
SCC: NONE
CONTROLS: NONE

PROFILE: 43201
RANKING: 1121
RATING : D

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIES NUMBER	SPECIES NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		NA	+ -	NR
5	B		+ -			+ -		0.120	+ -	NR
9	F		+ -			+ -		<	+ -	NR
11	NA		+ -			+ -		0.007	+ -	NR
12	MG		+ -			+ -		0.540	+ -	NR
13	AL		+ -			+ -		1.275	+ -	NR
14	SI		+ -			+ -		1.275	+ -	NR
15	P		+ -			+ -		0.105	+ -	NR
16	S		+ -			+ -		NR	+ -	NR
17	CL		+ -			+ -		<	+ -	NR
19	K		+ -			+ -		<	+ -	NR
20	CA		+ -			+ -		2.100	+ -	NR
21	SC		+ -			+ -		<	+ -	NR
22	TI		+ -			+ -		0.075	+ -	NR
23	V		+ -			+ -		0.030	+ -	NR
24	CR		+ -			+ -		0.007	+ -	NR
25	MN		+ -			+ -		0.007	+ -	NR
26	FE		+ -			+ -		1.650	+ -	NR
27	CO		+ -			+ -		0.007	+ -	NR
28	NI		+ -			+ -		0.090	+ -	NR
29	CU		+ -			+ -		0.060	+ -	NR
30	ZN		+ -			+ -		0.300	+ -	NR
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.030	+ -	NR
34	SE		+ -			+ -		<	+ -	NR
35	BR		+ -			+ -		<	+ -	NR
37	RB		+ -			+ -		<	+ -	NR
38	SR		+ -			+ -		0.030	+ -	NR
40	ZR		+ -			+ -		<	+ -	NR
47	AG		+ -			+ -		0.900	+ -	NR
48	CD		+ -			+ -		<	+ -	NR
50	SN		+ -			+ -		0.105	+ -	NR
51	SB		+ -			+ -		0.405	+ -	NR
55	CS		+ -			+ -		<	+ -	NR
56	BA		+ -			+ -		0.105	+ -	NR
58	CE		+ -			+ -		<	+ -	NR
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		0.015	+ -	NR
201	OC		+ -			+ -		40.000	+ -	NR
202	EC		+ -			+ -		40.000	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			89.238		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : AVERAGE OF TWO TESTS. WARM AIR FURNACE BURNING HIGH-ASH BITUMINOUS COAL
REF. 51.

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13-Jun-85                                   SOURCE LIBRARY ABSTRACT

PROFILE|REFERENCE|SOURCE    |                  REFERENCE                  |             REFERENCE ABSTRACT              |
NUMBER |NUMBER   |GROUP     |                                             |                                             |
--------------------------------------------------------------------------------------------------------------------------|
 43201 |       51 |RESIDENT.|T.W. HUGHES AND D. DeANGELES,"EMISSIONS FROM |AVERAGE OF TWO TESTS OF A 200K BTU           |
 43201 |          |HEATING- |COAL-FIRED RESIDENTIAL COMBUSTION            |COAL-FIRED WARM AIR FURNACE BURNING          |
 43201 |          |COAL     |EQUIPMENT,"PROCEEDINGS, 1981 CONFERENCE ON   |BITUMINOUS COAL (9.1% ASH, 37.5%             |
 43201 |          |         |RESID. SOLID FUELS. OREGON GRADUATE CENTER   |VOLATILES,1.5% S). ICAP AND AAS ANALYSIS OF  |
 43201 |          |         |(1981)                                       |METHOD 5 SAMPLES. ORIGIONAL DATA IN LB/TON.  |
 43201 |          |         |                                             |CARBON DATA APPROXIMATE.                     |
 43201 |          |         |                                             |                                             |
```

SOURCE: VOLCANIC ASH
SCC: NONE
CONTROLS: NONE

PROFILE: 43301
RANKING: 3321
RATING : C

SPECIES NUMBER	SPECIES NAME	********* % BY WT	FINE <2.5 UM + -	****** UNC	********* % BY WT	COARSE 2.5-10UM +-	****** UNC	********* % BY WT	TSP <30 UM +-	****** UNC
4	BE	NA	+ -	NR	NA	+ -	NR		+ -	
5	B	NA	+ -	NR	NA	+ -	NR		+ -	
9	F	NA	+ -	NR	NA	+ -	NR		+ -	
11	NA	3.400	+ -	0.100	3.400	+ -	0.100		+ -	
12	MG	0.800	+ -	0.020	0.800	+ -	0.020		+ -	
13	AL	8.600	+ -	0.200	8.600	+ -	0.200		+ -	
14	SI	32.000	+ -	1.000	32.000	+ -	1.000		+ -	
15	P	<	+ -	NR	<	+ -	NR		+ -	
16	S	0.040	+ -	NR	0.040	+ -	NR		+ -	
17	CL	0.060	+ -	0.020	0.060	+ -	0.020		+ -	
19	K	1.400	+ -	0.040	1.400	+ -	0.040		+ -	
20	CA	2.860	+ -	0.080	2.860	+ -	0.080		+ -	
21	SC	<	+ -	NR	<	+ -	NR		+ -	
22	TI	0.330	+ -	NR	0.330	+ -	NR		+ -	
23	V	0.010	+ -	NR	0.010	+ -	NR		+ -	
24	CR	<	+ -	NR	<	+ -	NR		+ -	
25	MN	0.050	+ -	NR	0.050	+ -	NR		+ -	
26	FE	2.490	+ -	0.070	2.490	+ -	0.070		+ -	
27	CO	<	+ -	NR	<	+ -	NR		+ -	
28	NI	<	+ -	NR	<	+ -	NR		+ -	
29	CU	<	+ -	NR	<	+ -	NR		+ -	
30	ZN	<	+ -	NR	<	+ -	NR		+ -	
31	GA	<	+ -	NR	<	+ -	NR		+ -	
32	GE	<	+ -	NR	<	+ -	NR		+ -	
33	AS	<	+ -	NR	<	+ -	NR		+ -	
34	SE	<	+ -	NR	<	+ -	NR		+ -	
35	BR	<	+ -	NR	<	+ -	NR		+ -	
37	RB	<	+ -	NR	<	+ -	NR		+ -	
38	SR	<	+ -	NR	<	+ -	NR		+ -	
40	ZR	<	+ -	NR	<	+ -	NR		+ -	
47	AG	<	+ -	NR	<	+ -	NR		+ -	
48	CD	<	+ -	NR	<	+ -	NR		+ -	
50	SN	<	+ -	NR	<	+ -	NR		+ -	
51	SB	<	+ -	NR	<	+ -	NR		+ -	
55	CS	<	+ -	NR	<	+ -	NR		+ -	
56	BA	0.040	+ -	NR	0.040	+ -	NR		+ -	
58	CE	<	+ -	NR	<	+ -	NR		+ -	
80	HG	<	+ -	NR	<	+ -	NR		+ -	
82	PB	<	+ -	NR	<	+ -	NR		+ -	
201	OC	NA	+ -	NR	NA	+ -	NR		+ -	
202	EC	NA	+ -	NR	NA	+ -	NR		+ -	
203	SO4	NA	+ -	NR	NA	+ -	NR		+ -	
204	NO3	NA	+ -	NR	NA	+ -	NR		+ -	
SUM(%)		52.080			52.080					

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NA = NOT ANALYZED : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT
OTHER NOTES : MT. ST. HELENS ASH FROM LEWISTON,IDAHO. REF. 42.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
43301	42	VOLCANIC	J.A. COOPER,"LEWISTON, IDAHO AEROSOL STUDY"	RESUSPENDED MT. ST. HELENS ASH COLLECTED IN
43301		ASH	UNPUBLISHED	LEWISTON, IDAHO.
43301				

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21-Jun-85                                             SOURCE LIBRARY

                SOURCE:     ORCHARD HEATING - SMUDGE POTS                                 PROFILE:    43302
                SCC:        NONE                                                          RANKING:     2324
                CONTROLS:   NONE                                                          RATING :        B
----------------------------------------------------------------------------------------------------------------
                                      FINE                                 COARSE                            TSP
  SPECIE     SPECIE    *********   <2.5 UM   ******     *********   2.5-10UM  ******     *********   <30 UM  ******
  NUMBER      NAME     % BY WT      + -       UNC       % BY WT        +-      UNC       % BY WT      +-      UNC
  -------     -----    ---------  -------    -----      ---------   --------  ------     ---------   -----   ------
        4      BE         NA        + -        NR          NA          + -      NR                    + -
        5      B          NA        + -        NR          NA          + -      NR                    + -
        9      F          NA        + -        NR          NA          + -      NR                    + -
       11      NA         NA        + -        NR          NA          + -      NR                    + -
       12      MG       0.120       + -      0.071       0.120         + -    0.071                   + -
       13      AL       0.035       + -      0.020       0.035         + -    0.020                   + -
       14      SI       0.060       + -      0.085       0.060         + -    0.085                   + -
       15      P          NA        + -        NR          NA          + -      NR                    + -
       16      S        0.890       + -      0.100       0.890         + -    0.100                   + -
       17      CL         <         + -        NR          <           + -      NR                    + -
       19      K          <         + -        NR          <           + -      NR                    + -
       20      CA         <         + -        NR          <           + -      NR                    + -
       21      SC         NA        + -        NR          NA          + -      NR                    + -
       22      TI         <         + -        NR          <           + -      NR                    + -
       23      V          <         + -        NR          <           + -      NR                    + -
       24      CR         <         + -        NR          <           + -      NR                    + -
       25      MN         <         + -        NR          <           + -      NR                    + -
       26      FE         <         + -        NR          <           + -      NR                    + -
       27      CO         NA        + -        NR          NA          + -      NR                    + -
       28      NI         <         + -        NR          <           + -      NR                    + -
       29      CU         <         + -        NR          <           + -      NR                    + -
       30      ZN       0.013       + -        NR        0.013         + -      NR                    + -
       31      GA         <         + -        NR          <           + -      NR                    + -
       32      GE         <         + -        NR          <           + -      NR                    + -
       33      AS         <         + -        NR          <           + -      NR                    + -
       34      SE         <         + -        NR          <           + -      NR                    + -
       35      BR       0.006       + -      0.006       0.006         + -    0.006                   + -
       37      RB         NA        + -        NR          NA          + -      NR                    + -
       38      SR         <         + -        NR          <           + -      NR                    + -
       40      ZR         NA        + -        NR          NA          + -      NR                    + -
       47      AG         NA        + -        NR          NA          + -      NR                    + -
       48      CD         <         + -        NR          <           + -      NR                    + -
       50      SN         NA        + -        NR          NA          + -      NR                    + -
       51      SB         <         + -        NR          <           + -      NR                    + -
       55      CS         NA        + -        NR          NA          + -      NR                    + -
       56      BA         <         + -        NR          <           + -      NR                    + -
       58      CE         <         + -        NR          <           + -      NR                    + -
       82      PB       0.059       + -      0.044       0.059         + -    0.044                   + -
      201      OC       7.200       + -      3.960       7.200         + -    3.960                   + -
      202      EC      83.500       + -      9.000      83.500         + -    9.000                   + -
      203      SO4      1.800       + -      1.131       1.800         + -    1.131                   + -
      204      NO3        NA        + -        NR          NA          + -      NR                    + -
      206      NH4      1.730       + -      0.665       1.730         + -    0.665                   + -
  SUM( % )             92.793                           92.793

  NOTES:    OC = ORGANIC CARBON :  EC = ELEMENTAL CARBON : NR = NOT REPORTED
            < = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
            OTHER NOTES :       REF. 45.
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SOURCE LIBRARY ABSTRACT

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
43302	45	SMUDGE	R.T.DECESAR AND JA COOPER,"MEDFORD AEROSOL	AVERAGE OF TWO SAMPLES COLLECTED WITH A
43302		POTS	CHARACTERIZATION STUDY," REPORT TO THE	TWO-STAGE VIRTUAL IMPACTOR.
43302			OREGON DEPT. ENVIRON. QUALITY. OREGON	
43302			GRADUATE CENTER (1980)	
43302				

SOURCE: COAL-FIRED POWER UTILITY FLYASH (SRM 1633)
SCC: 1-01-001-01
CONTROLS: ESP CATCH

PROFILE: 43303
RANKING: 2338
RATING : A

		*********	FINE <2.5 UM	******	*********	COARSE 2.5-10UM	******	*********	TSP <30 UM	******
SPECIE NUMBER	SPECIE NAME	% BY WT	+ -	UNC	% BY WT	+-	UNC	% BY WT	+-	UNC
4	BE		+ -			+ -		<	+ -	NR
5	B		+ -			+ -		<	+ -	NR
9	F		+ -			+ -		<	+ -	NR
11	NA		+ -			+ -		0.340	+ -	0.200
12	MG		+ -			+ -		1.500	+ -	0.160
13	AL		+ -			+ -		13.200	+ -	0.500
14	SI		+ -			+ -		21.000	+ -	2.000
15	P		+ -			+ -		<	+ -	NR
16	S		+ -			+ -		<	+ -	NR
17	CL		+ -			+ -		0.004	+ -	0.001
19	K		+ -			+ -		1.600	+ -	0.080
20	CA		+ -			+ -		4.200	+ -	0.400
21	SC		+ -			+ -		0.002	+ -	0.001
22	TI		+ -			+ -		0.730	+ -	0.040
23	V		+ -			+ -		0.025	+ -	0.003
24	CR		+ -			+ -		0.013	+ -	0.001
25	MN		+ -			+ -		0.051	+ -	0.001
26	FE		+ -			+ -		6.200	+ -	0.300
27	CO		+ -			+ -		0.004	+ -	0.001
28	NI		+ -			+ -		0.009	+ -	0.001
29	CU		+ -			+ -		<	+ -	NR
30	ZN		+ -			+ -		0.022	+ -	0.002
31	GA		+ -			+ -		<	+ -	NR
32	GE		+ -			+ -		<	+ -	NR
33	AS		+ -			+ -		0.006	+ -	0.001
34	SE		+ -			+ -		0.001	+ -	0.001
35	BR		+ -			+ -		<	+ -	NR
37	RB		+ -			+ -		0.013	+ -	0.001
38	SR		+ -			+ -		<	+ -	NR
40	ZR		+ -			+ -		0.030	+ -	0.001
47	AG		+ -			+ -		<	+ -	NR
48	CD		+ -			+ -		<	+ -	NR
50	SN		+ -			+ -		<	+ -	NR
51	SB		+ -			+ -		0.001	+ -	0.001
55	CS		+ -			+ -		0.001	+ -	0.001
56	BA		+ -			+ -		0.270	+ -	0.020
58	CE		+ -			+ -		0.015	+ -	0.001
80	HG		+ -			+ -		<	+ -	NR
82	PB		+ -			+ -		0.007	+ -	0.001
201	OC		+ -			+ -		NA	+ -	NR
202	EC		+ -			+ -		NA	+ -	NR
203	SO4		+ -			+ -		NA	+ -	NR
204	NO3		+ -			+ -		NA	+ -	NR
SUM(%)		0.000			0.000			49.244		

NOTES: OC = ORGANIC CARBON : EC = ELEMENTAL CARBON : NR = NOT REPORTED
< = LESS THAN DETECTION LIMIT : NA = NOT ANALYZED
OTHER NOTES : U. OF MARYLAND INAA ANALYSIS. SRM 1633 IS
REF: 9 A BLEND OF FLAYASH COLLECTED BY CONTROL SYSTEMS.

PROFILE NUMBER	REFERENCE NUMBER	SOURCE GROUP	REFERENCE	REFERENCE ABSTRACT
43303	9	COAL	S.S. RAY AND F.G. PARKER," CHARACTERIZATION	UNIVERSITY OF MARYLAND INNA ANALYSIS OF SRM
43303		FLYASH	OF ASH FROM COAL-FIRED POWER PLANTS"U.S. EPA	1633 COAL FLYASH BLEND TAKEN FROM SEVERAL
43303			#600/7-77-010 (1977).	POWER PLANTS CONTROL SYSTEMS. NOT
43303				REPRESENTATIVE OF STACK EMISSIONS.
43303				

Appendix A
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Appendix B
Additional Literature

Appendix B
Additional Source Composition Literature

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